DOCUMENT RESUME

ED 158 087 08 CE 017 565

AUTHOR	Steinberg, Alan; And Others
TITLE	Multiple Learning Strategies Project. Building Maintenance & Engineering. Educable Mentally Impaired. [Vol. 3.]
INSTITUTION	Ingham Intermediate School District, Mason, Mich. Capital Area Career Center.
SPONS AGENCY	Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.
BUREAU NO	498AH60038
PUB DATE	18 Mar 77
GRANT	G007603808
NOTE	319p.; For related documents see CE 017 554-583
EDRS PRICE	MF-$0.83 HC-$16.73 Plus Postage.
DESCRIPTORS	Buildings; Cleaning; *Educable Mentally Handicapped; *Learning Activities; *Learning Modules; *Maintenance; Repair; Special Education; *Vocational Education; Young Adults

ABSTRACT

This instructional package is one of three designed for educable mentally impaired students in the vocational area of building maintenance and engineering. The thirty-one learning modules are organized into nine units: grounds; sanitation; boiler maintenance and operation; power and hand tools; cabinet construction; repair of damaged furniture; windows; and door maintenance. Each module includes these elements: a performance objective page which tells the student what will be learned, what materials are needed, and what the student must do in the module; and a job step page written in a read (cognitive information), look (graphic illustrations), do (instructions), and check (student is evaluated by teacher) format. (This document and related documents CE 017 564 and CE 017 563 are one of four sets of learning modules on maintenance and engineering. The other three sets are written in formats designed for regular vocational, visually impaired, and low-reader students. The modules are part of a total set of over 1,300 modules written for different student populations. Graphics, dietetic assistant, small engine repair, and medical assistant are the other vocational areas covered. CE 017 554 is the final report of the project to develop the modules.) (JH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED158087

[illegible]

[illegible]

[illegible]

[illegible]

TO:

MULTIPLE LEARNING STRATEGIES PROJECT

BUILDING MAINTENANCE & ENGINEERING
Educable Mentally Impaired

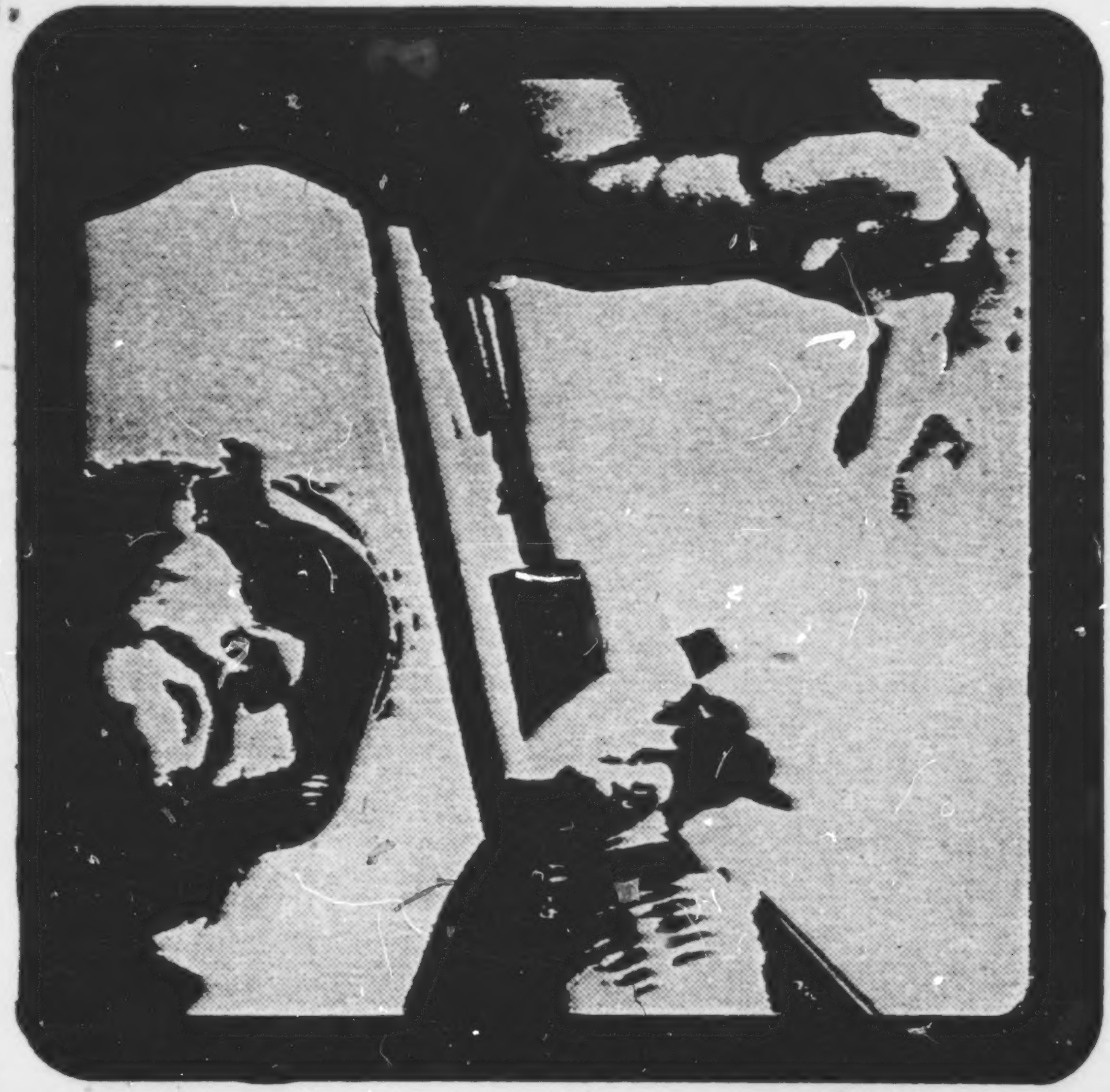
[VOL. 3]

3

CE 017 565

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY



building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 015 1 date: 3/18/77 level: 1

skill title: FERTILIZING A LAWN

developed & written by: ALAN STEINBERG

visuals by:

WORD GUIDE

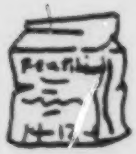
FERTILIZER - PLANT FOOD.

PERFORMANCE OBJECTIVE

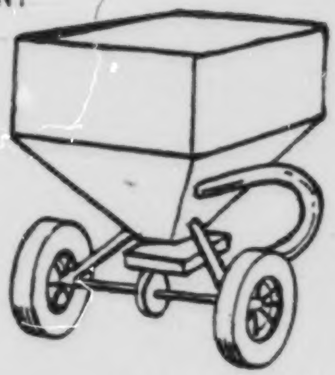
WHAT YOU WILL LEARN:

HOW TO SPREAD FERTILIZER ON A LAWN.

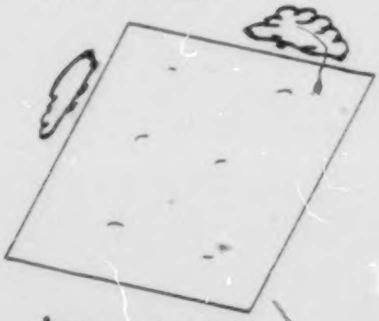
WHAT YOU WILL NEED:



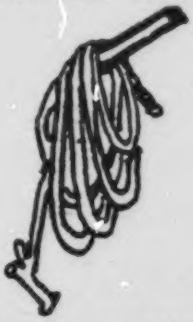
FERTILIZER



MECHANICAL SPREADER



AREA OF LAWN



GARDEN HOSE AND NOZZLE

WHAT YOU MUST DO:

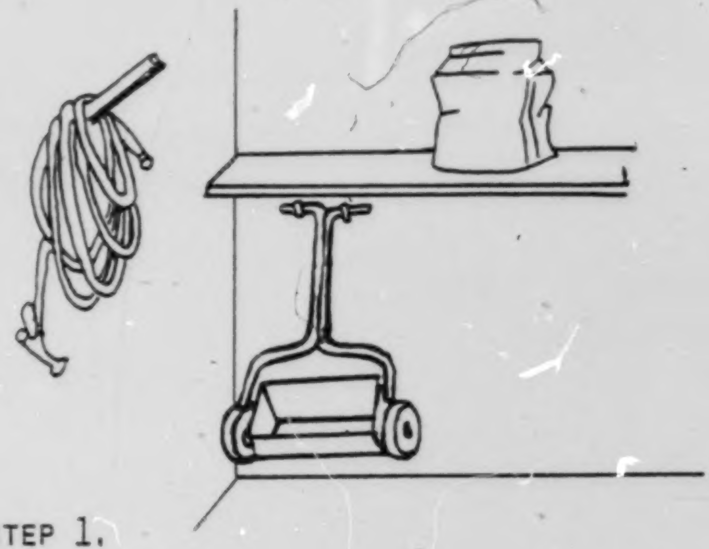
1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS FOR SPREADING FERTILIZER ON A LAWN.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL THE EQUIPMENT LISTED ON PAGE 2.

LOOK:

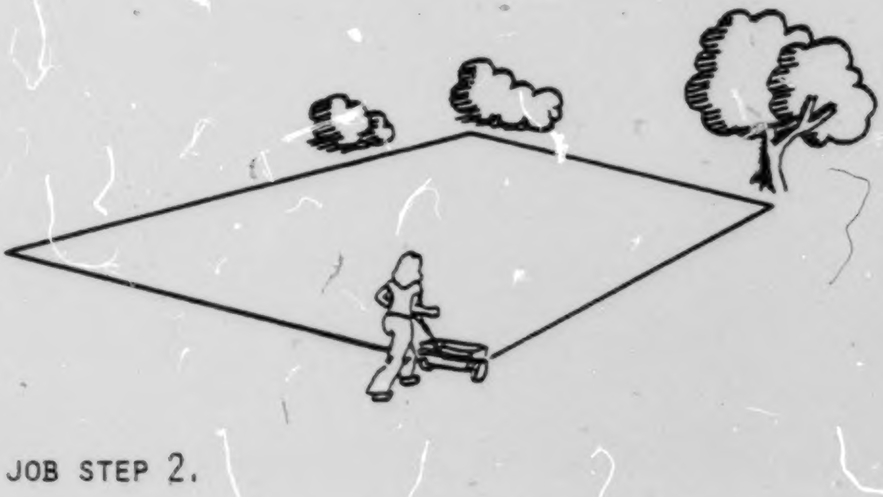


DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE ALL THE EQUIPMENT IN THE PICTURE.

READ: 2. TAKE THE EQUIPMENT TO THE AREA WHERE YOU WILL FERTILIZE A LAWN.

LOOK:



DO: DO JOB STEP 2.

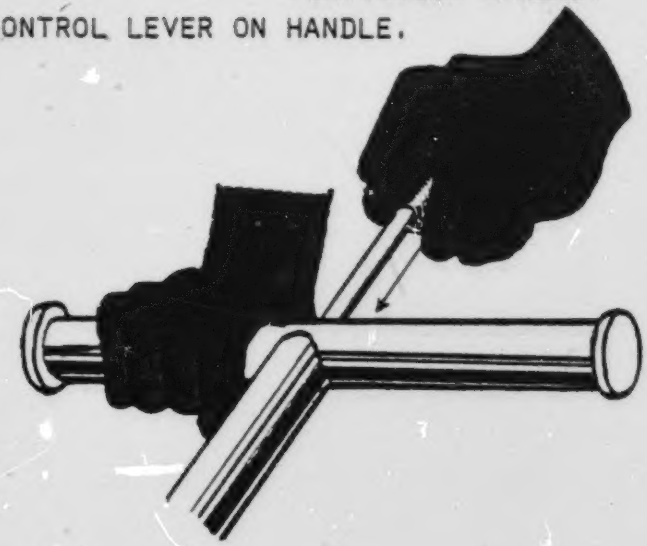
CHECK: ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE GONE TO THE RIGHT WORK AREA.

"TURN THE PAGE"

WORD GUIDE
CONTROL LEVER - CONTROLS AMOUNT OF FERTILIZER SPREAD.

READ: 3. CLOSE CONTROL LEVER ON HANDLE.

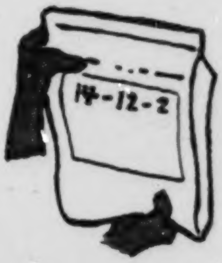
LOOK:



DO: DO JOB STEP 3.

READ: 4. FIND NUMBER SETTING ON FERTILIZER BAG.

LOOK:

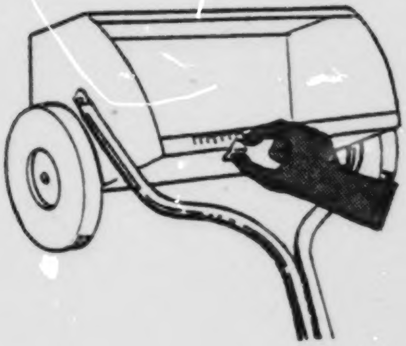


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. SET DIAL ON SPREADER TO THE RIGHT NUMBER.

LOOK:



DO: DO JOB STEP 5.

CHECK: ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE SET THE DIAL ON SPREADER TO THE RIGHT NUMBER.

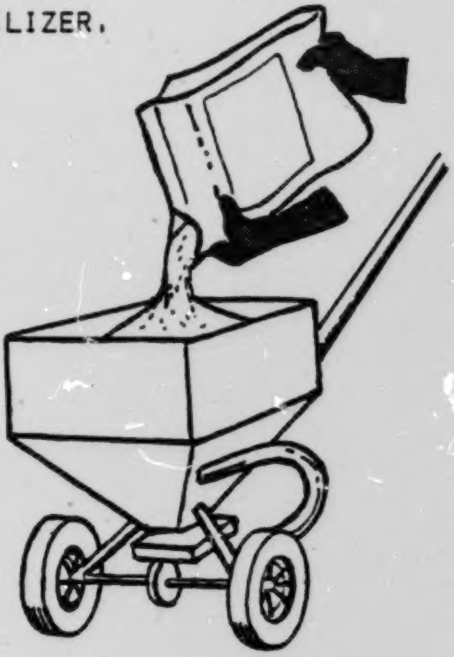
"TURN THE PAGE"

WORD GUIDE

HOPPER - BOX OR CONTAINER THAT HOLDS MATERIALS.

READ: 6. FILL THE HOPPER OF SPREADER WITH FERTILIZER.

LOOK:



DO: DO JOB STEP 6.

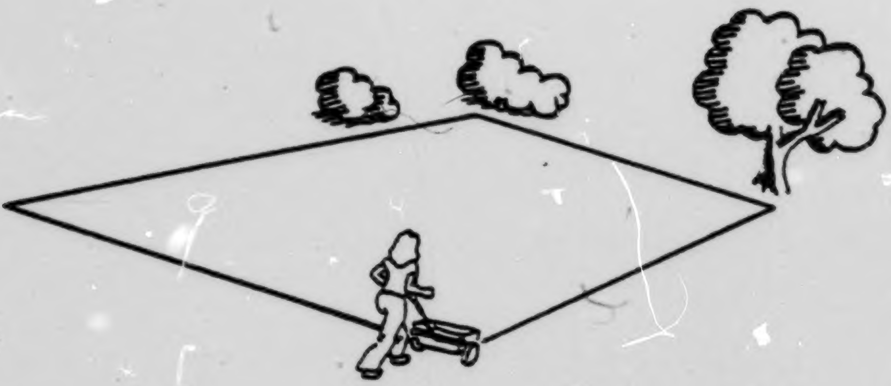
CHECK: YOUR INSTRUCTOR WILL NOW CHECK TO BE SURE YOU HAVE:

1. PUT TOGETHER ALL YOUR EQUIPMENT.
2. FOUND THE RIGHT NUMBER SETTING ON SPREADER.
3. FILLED THE HOPPER WITH FERTILIZER.

"TURN THE PAGE"

READ: 7. START AT ONE CORNER OF LAWN.

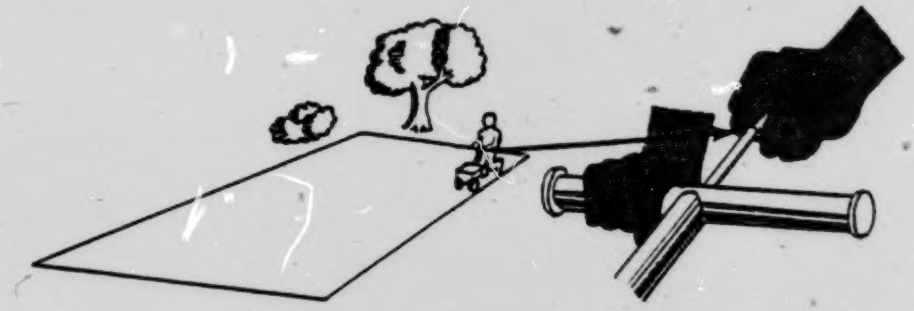
LOOK:



DO: DO JOB STEP 7.

READ: 8. OPEN CONTROL LEVER AND THEN BEGIN WALKING IN A STRAIGHT LINE.

LOOK:

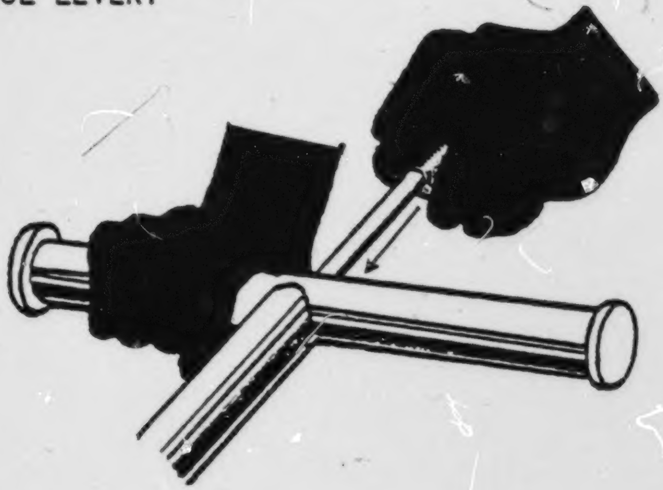


DO: DO JOB STEP 8.

"TURN THE PAGE"

READ: 9. WHEN YOU COME TO THE END OF THE ROW, CLOSE CONTROL LEVER.

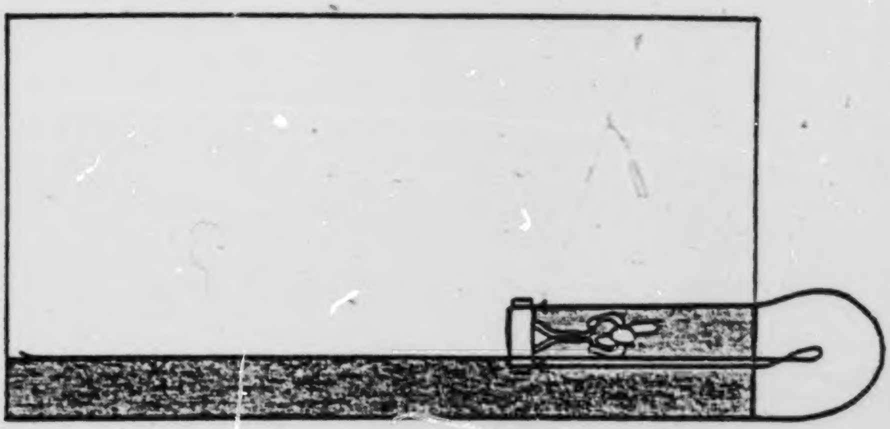
LOOK:



DO: Do JOB STEP 9.

READ: 10. TURN AROUND.

LOOK:

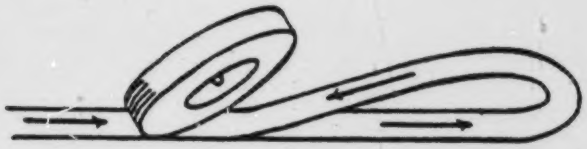


DO: Do JOB STEP 10.

"TURN THE PAGE"

READ: 11. PUSH THE SPREADER NOW SO THAT ONE WHEEL RUNS IN THE TRACKS YOU JUST MADE.

LOOK:

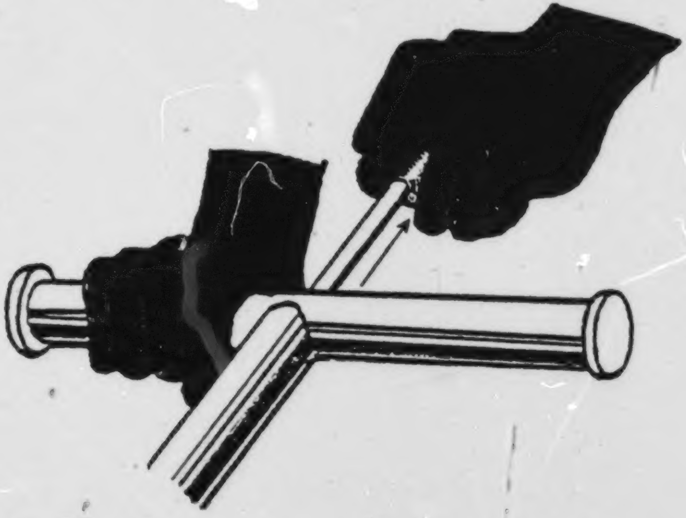


DO: Do JOB STEP 11.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 11.

READ: 12. OPEN CONTROL LEVER AND THEN BEGIN WALKING IN A STRAIGHT LINE.

LOOK:

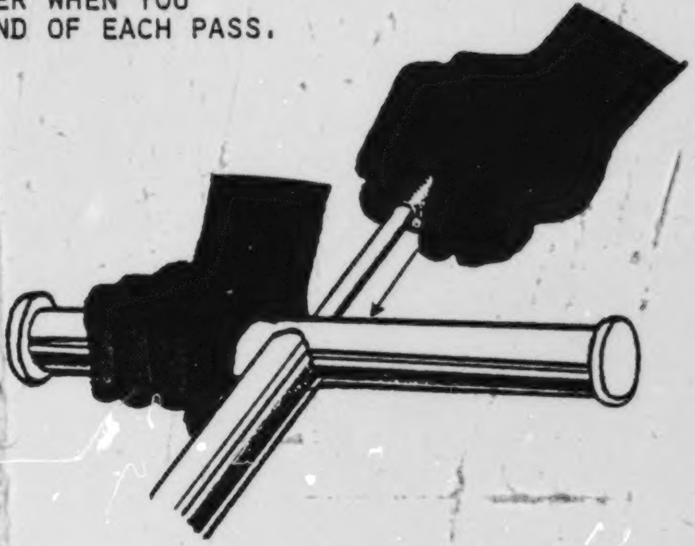


DO: Do JOB STEP 12.

"TURN THE PAGE"

READ: 13. BE SURE YOU CLOSE CONTROL LEVER WHEN YOU REACH THE END OF EACH PASS.

LOOK:

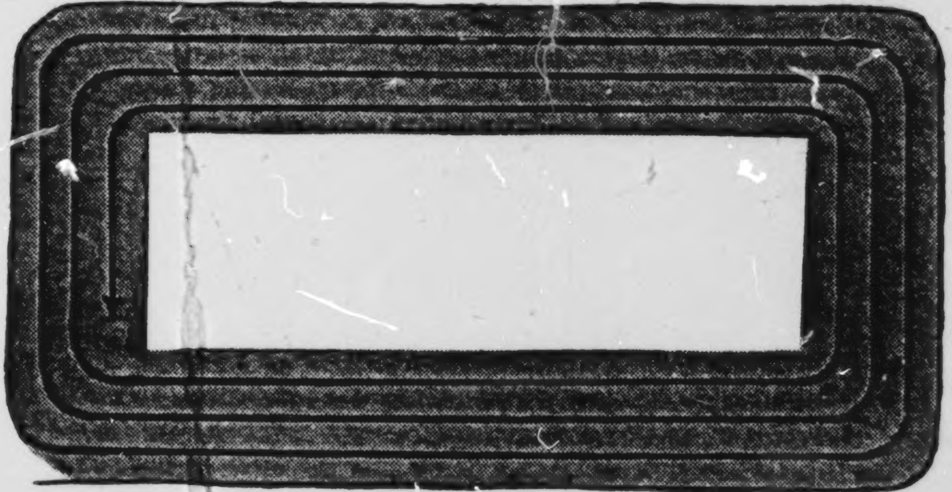


DO: DO JOB STEP 13.

CHECK: WHEN YOU HAVE DONE JOB STEP 13, ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 14. FERTILIZE ENTIRE AREA.

LOOK:

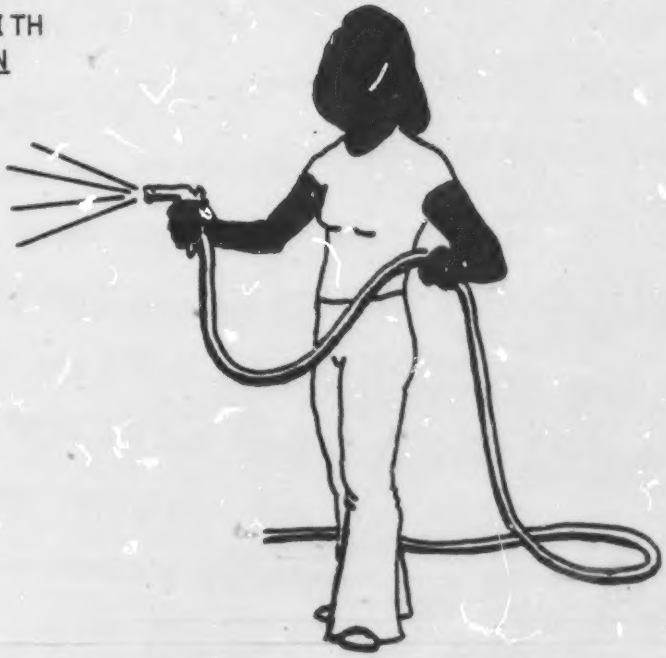


DO: DO JOB STEP 14.

"TURN THE PAGE"

READ: 15. CLEAN SPREADER WITH HOSE AND NOZZLE. OPEN CONTROL LEVER AND LET WATER DRAIN OUT ALL FERTILIZER.

LOOK:

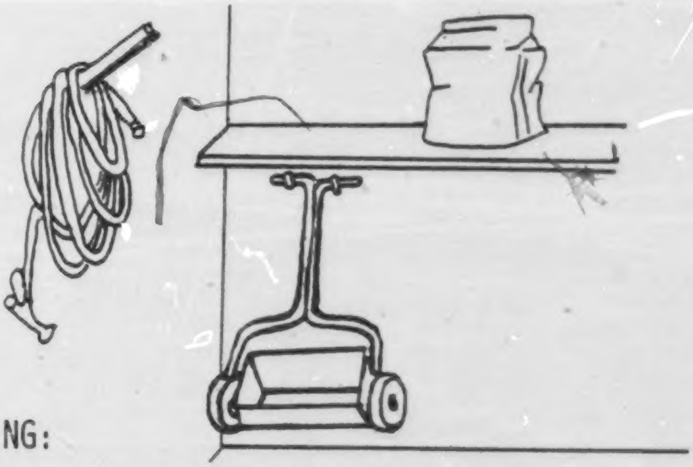


DO: Do JOB STEP 15.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 15.

READ: 16. RETURN ALL EQUIPMENT TO STORAGE AREA. BE SURE ALL EQUIPMENT IS CLEANED. YOU HAVE FINISHED READING AND DOING THE JOB STEPS FOR FERTILIZING A LAWN.

LOOK:



DO: NOW DO THE FOLLOWING:

ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE CLEANED AND RETURNED ALL EQUIPMENT TO STORAGE AREA.

building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 016 1 date: 4/77 level: I

skill title: PREPARE SOIL FOR NEW LAWN

developed & written by: DEBORAH J. LIVINGSTON-WHITE

visuals by: GLEN COOLEY

14

WORD GUIDE

CLODS - LUMPS OF SOIL.

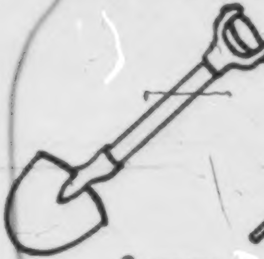
PREPARE - TO GET READY.

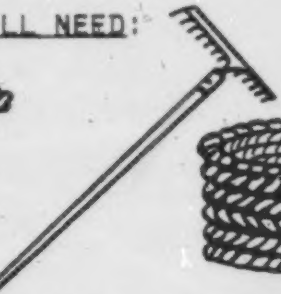
PERFORMANCE OBJECTIVE

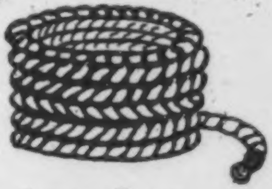
WHAT YOU WILL LEARN:

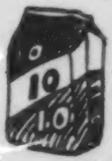
HOW TO PREPARE SOIL FOR PLANTING A NEW LAWN.

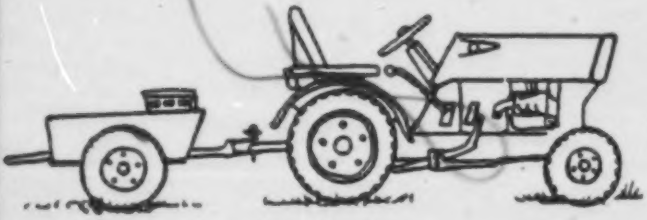
WHAT YOU WILL NEED:

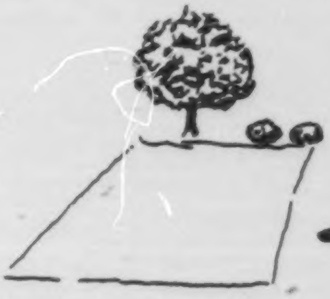

SHOVEL

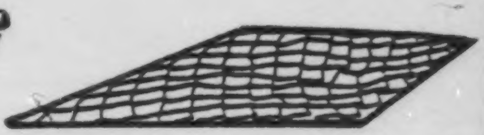

RAKE


LONG ROPE


FERTILIZER (10-10-10)


SMALL LAWN TRACTOR AND CART


FLAT AREA OF GROUND


CHAIN LINK MAT

WHAT YOU MUST DO:

1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS ON HOW TO PREPARE SOIL FOR A NEW LAWN.
4. BE SURE SOIL HAS NO ROCKS OR BIG CLODS OF DIRT.

JOB STEPS

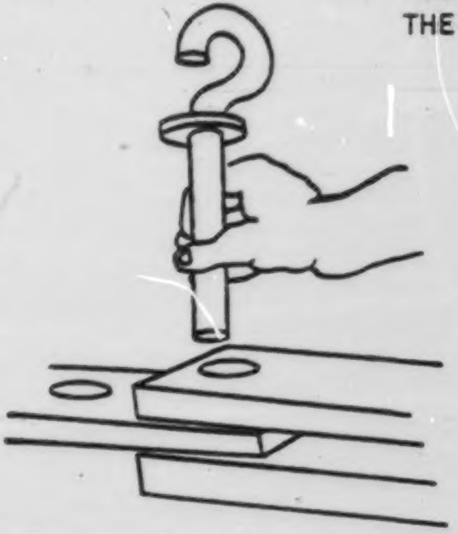
READ: 1. READ MODULE 2201 07 010 1 ON HOW TO USE A SMALL LAWN TRACTOR.

DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR WHERE YOU SHOULD WORK AND PREPARE THE SOIL FOR A NEW LAWN.

READ: 2. HOOK THE CART TO THE BACK OF THE TRACTOR. PUT THE PIN IN THE HOLE.

LOOK:

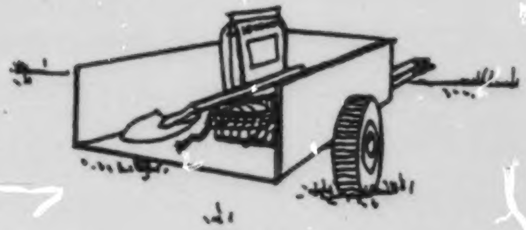


DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: 3. PUT ALL YOUR TOOLS IN THE CART.

LOOK:

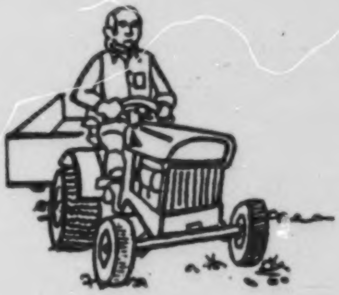


DO: DO JOB STEP 3.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE ALL THE EQUIPMENT IN THE PICTURE. HAVE INSTRUCTOR CHECK THE PIN AT BACK OF TRACTOR.

READ: 4. DRIVE THE TRACTOR TO THE PLACE WHERE YOU WILL WORK.

LOOK:

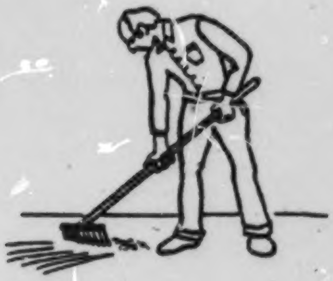


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. USING THE SHOVEL, TURN OVER THE SOIL. RAKE THE SOIL TO BREAK UP THE CLODS.

LOOK:

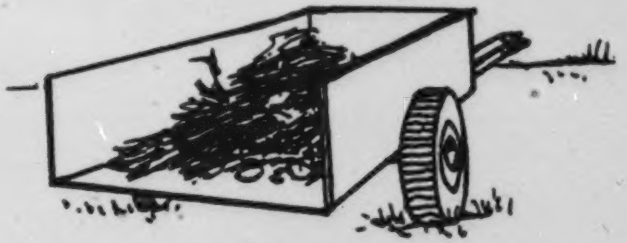


DO: Do JOB STEP 5.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU TURN OVER THE SOIL AND BREAK UP THE CLODS. TURN OVER ALL OF THE SOIL IN THE PLACE YOU ARE WORKING.

READ: 6. PICK UP ALL LARGE ROCKS, STICKS AND WEEDS. PUT THEM INTO THE CART.

LOOK:

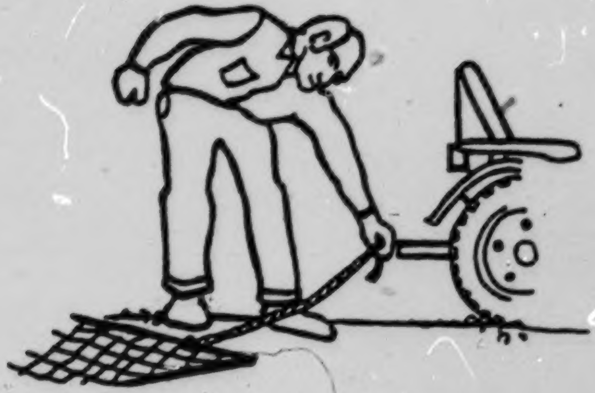


DO: Do JOB STEP 6.

"TURN THE PAGE"

READ: 7. UNHOOK THE CART FROM THE TRACTOR BY REMOVING THE PIN. TIE THE CHAIN-LINK MAT ON TO THE TRACTOR.

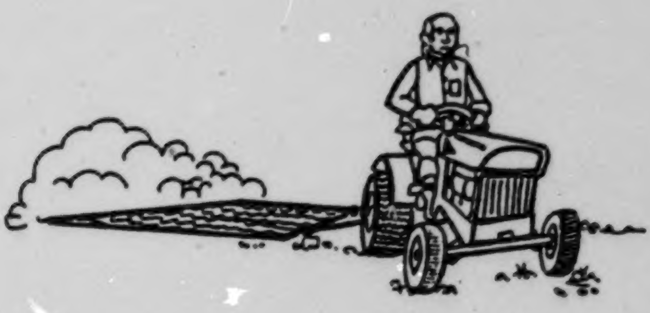
LOOK:



DO: Do JOB STEP 7.

READ: 8. DRIVE TRACTOR ALL AROUND THE AREA OF GROUND. THIS WILL SMOOTH OUT THE SOIL.

LOOK:



DO: Do JOB STEP 8.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU DRIVE THE TRACTOR.

"TURN THE PAGE"

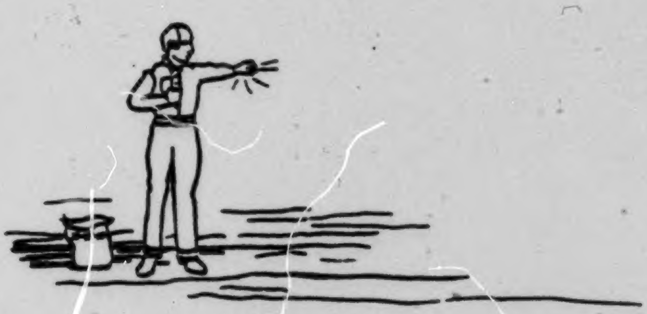
READ: 9. PICK UP ANY STONES, STICKS OR WEEDS AND PUT THEM IN THE CART.

DO: Do JOB STEP 9.

CHECK: ASK YOUR INSTRUCTOR TO CHECK TO SEE THAT THE SOIL IS SMOOTH AND CLEAR.

READ: 10. USING YOUR HAND, SPRINKLE OVER THE SOIL. IF YOUR AREA IS LARGE, USE A MECHANICAL SPREADER. DO MODULES 2201 07 014 1 AND 2201 07 015 1 IF YOU USE A MECHANICAL SPREADER.

LOOK:



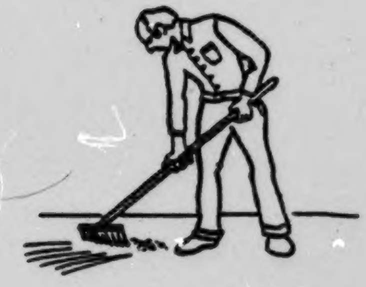
DO: Do JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR FOR CORRECT AMOUNT OF FERTILIZER.

"TURN THE PAGE"

READ: 11. RAKE THE FERTILIZER INTO THE SOIL.

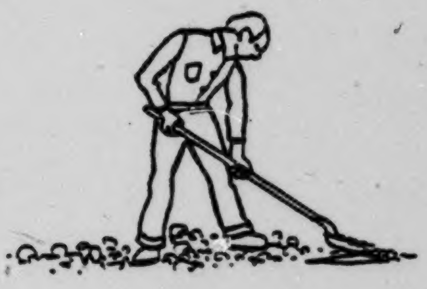
LOOK:



DO: Do JOB STEP 11.

READ: 12. USING THE SHOVEL, FILL IN LOW PLACES. USING THE RAKE, SMOOTH OVER SOIL AGAIN.

LOOK:

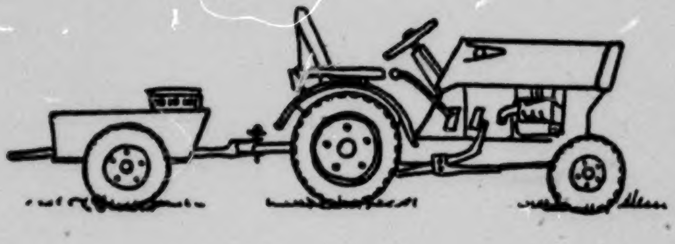


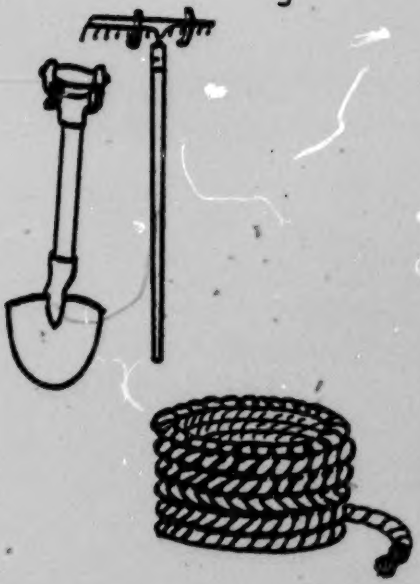
DO: Do JOB STEP 12.

"TURN THE PAGE"

READ: 13. PUT YOUR TOOLS AWAY.

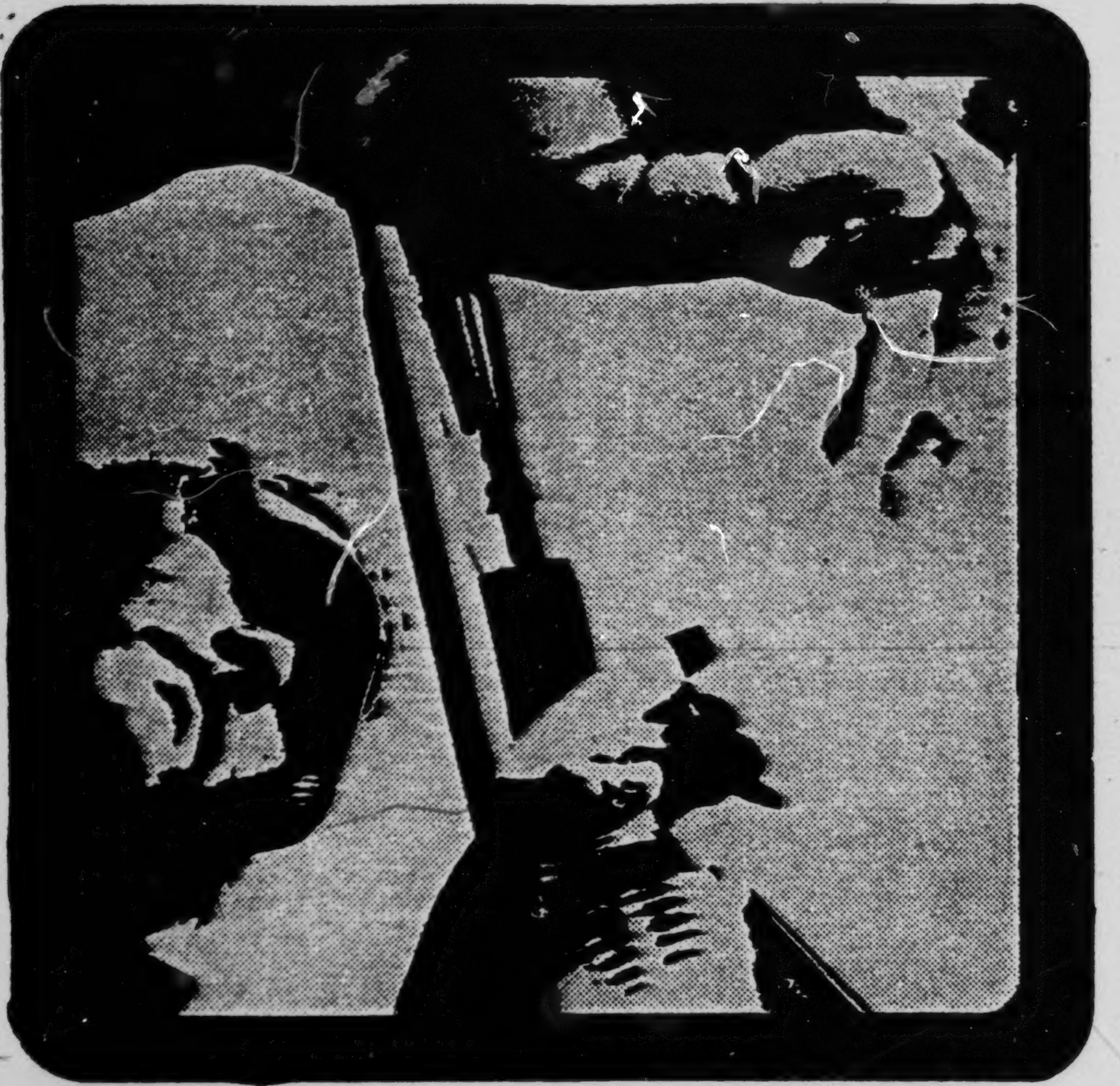
LOOK:





DO: Do JOB STEP 13.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE PUT AWAY ALL TOOLS.



building maintenance & engineering

unit: GROUNDS

capital area career center

module: 2201 07 017 1 date: 3/16/77 level: 1

skill title: PLANTING A NEW LAWN

developed & written by: ALAN STEINBERG

visuals by:

WORD GUIDE

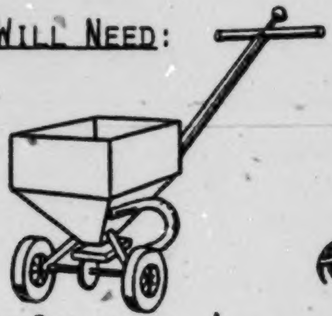
PREPARED - SOMETHING MADE READY.

PERFORMANCE OBJECTIVE

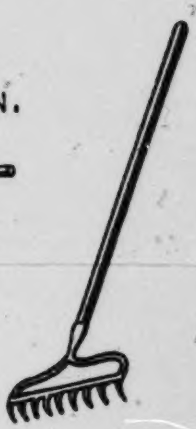
WHAT YOU WILL LEARN:

HOW TO PLANT A NEW LAWN.

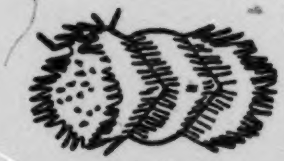
WHAT YOU WILL NEED:



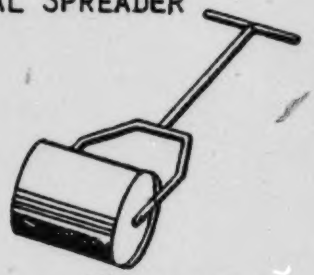
MECHANICAL SPREADER



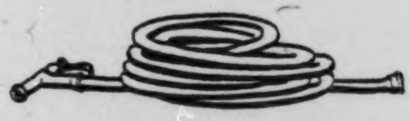
RAKE



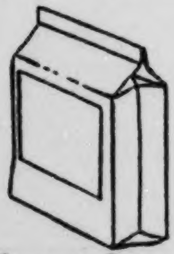
STRAW



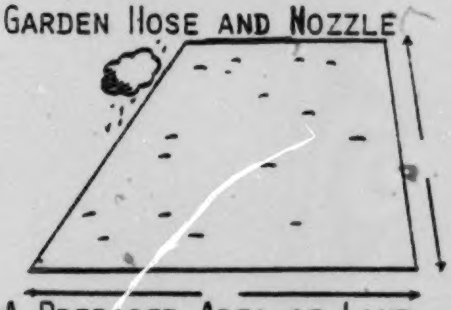
LIGHT ROLLER (50 POUNDS)



GARDEN HOSE AND NOZZLE



GRASS SEED



A PREPARED AREA OF LAND

WHAT YOU MUST DO:

1. READ THE MODULE.
2. DO THE JOB STEPS FOR PLANTING A NEW LAWN.

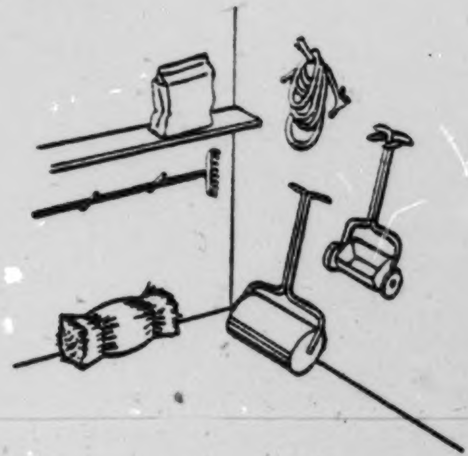
"TURN THE PAGE"

2

JOB STEPS

READ: 1. GET ALL THE EQUIPMENT LISTED ON PAGE 2.

LOOK:

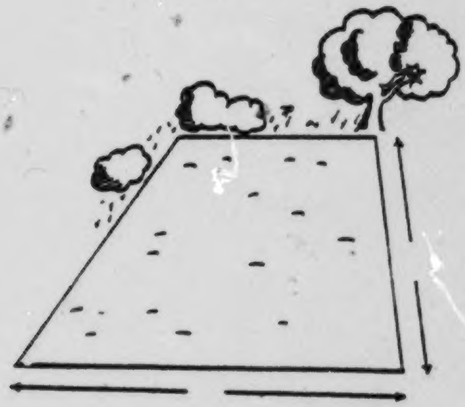


DO: Do JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE ALL THE EQUIPMENT IN THE PICTURE.

READ: 2. TAKE THE EQUIPMENT TO THE AREA WHERE YOU WILL PLANT A NEW LAWN.

LOOK:

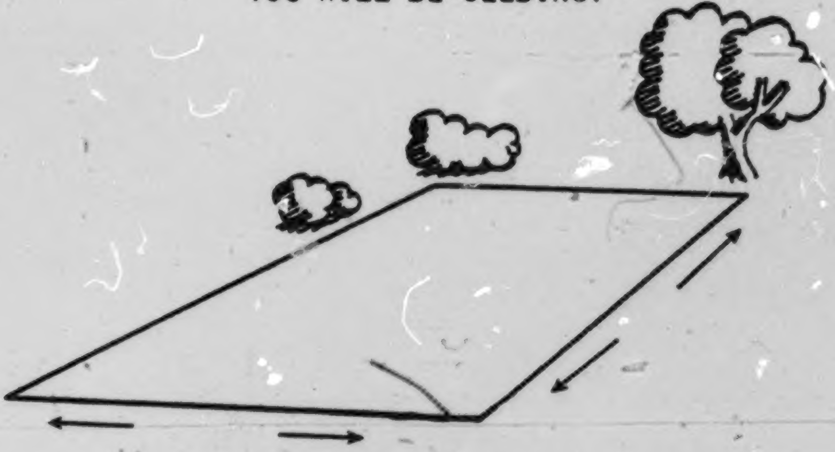


DO: Do JOB STEP 2. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

"TURN THE PAGE"

READ: 3. ASK YOUR INSTRUCTOR TO HELP YOU FIND OUT HOW LARGE AN AREA YOU WILL BE SEEDING.

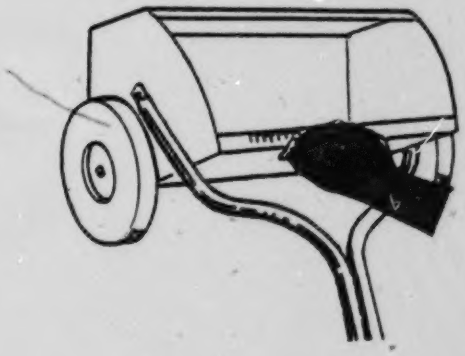
LOOK:



DO: DO JOB STEP 3.

READ: 4. READ DIRECTIONS ON MECHANICAL SEEDER. THEN, SET THE SEEDER TO THE RIGHT SETTING.

LOOK:



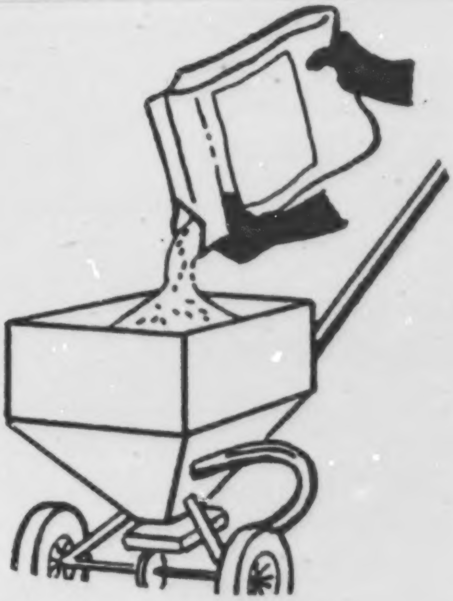
DO: DO JOB STEP 4.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE SET THE SEEDER TO THE RIGHT SETTING.

"TURN THE PAGE"

READ: 5. POUR GRASS SEED INTO THE SEEDER.

LOOK:



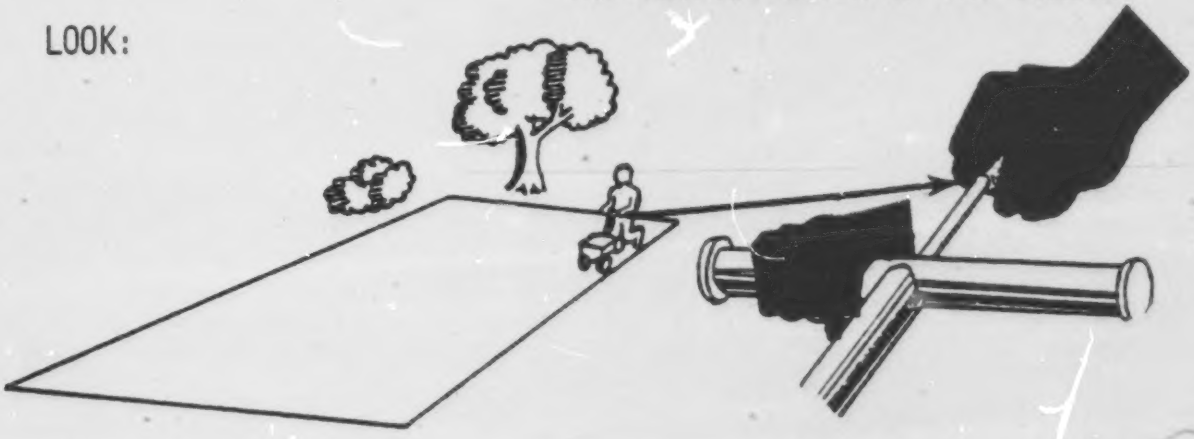
DO: DO JOB STEP 5.

CHECK: YOUR INSTRUCTOR WILL NOW CHECK TO BE SURE YOU HAVE:

1) PUT TOGETHER ALL YOUR EQUIPMENT.
2) FOUND OUT HOW LARGE AN AREA YOU WILL SEED.
3) SET THE SEEDER AND POURED GRASS SEED INTO IT.

READ: 6. MOVE THE SEEDER TO ONE CORNER OF YOUR WORK AREA. NOW, OPEN THE CONTROL LEVER ON THE SEEDER.

LOOK:

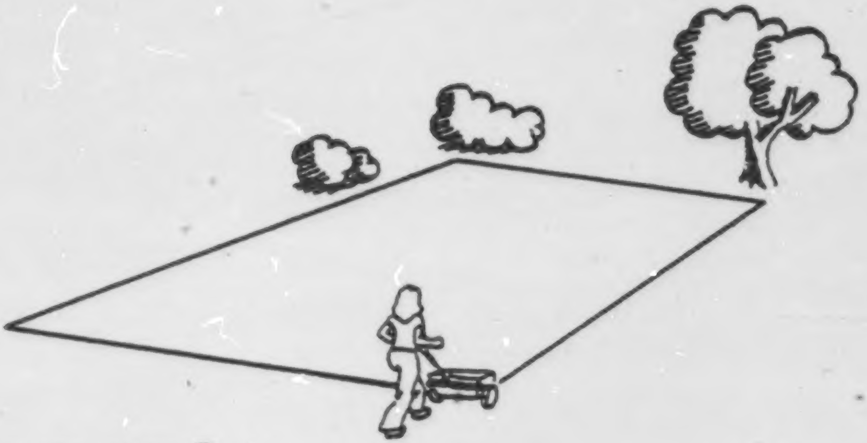


DO: DO JOB STEP 6.

"TURN THE PAGE"

READ: 7. START AT THIS CORNER AND WALK IN A STRAIGHT LINE TO THE NEXT CORNER.

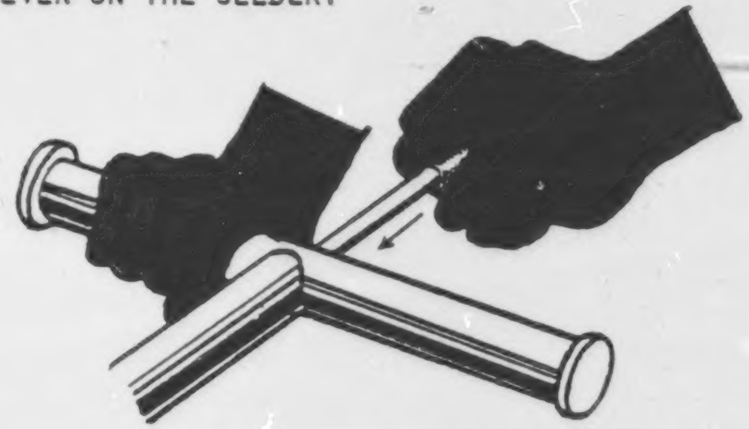
LOOK:



DO: Do JOB STEP 7.

READ: 8. WHEN YOU GET TO THE NEXT CORNER, CLOSE THE CONTROL LEVER ON THE SEEDER.

LOOK:

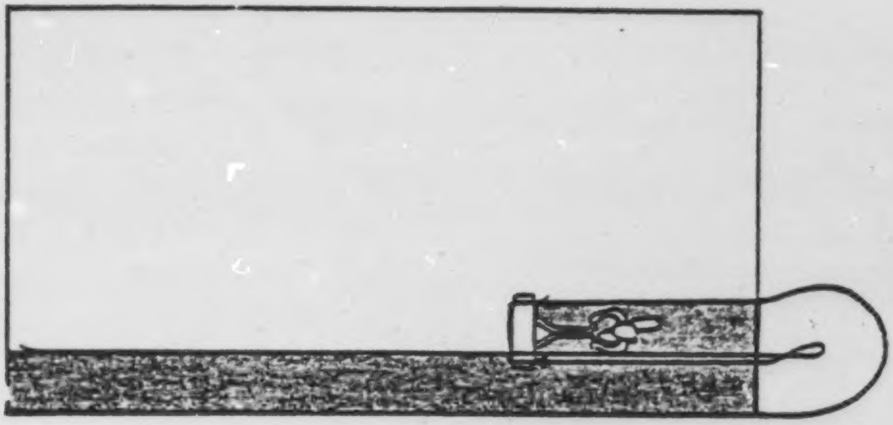


DO: Do JOB STEP 8.

"TURN THE PAGE"

READ: 9. TURN AROUND.

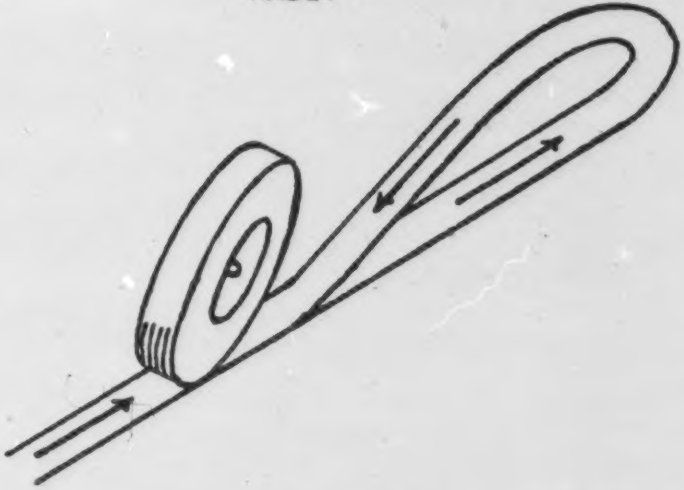
LOOK:



DO: DO JOB STEP 9.

READ: 10. PUSH THE SEEDER NOW SO THAT ONE WHEEL RUNS IN THE TRACKS YOU JUST MADE.

LOOK:



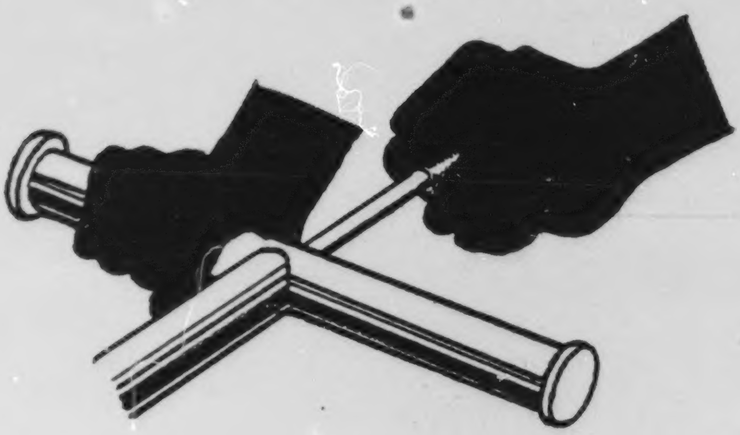
DO & CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 10 AND JOB STEP 11.

"TURN THE PAGE"

READ: 11. OPEN THE CONTROL LEVER ON THE SEEDER AND WALK UP AND BACK, UNTIL YOU SEED THE WHOLE AREA.

NOTE: BE SURE YOU CLOSE THE LEVER WHENEVER YOU TURN AROUND.

LOOK:

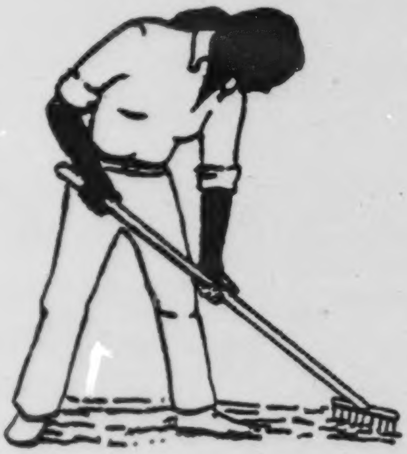


DO: DO JOB STEP 11.

CHECK: WHEN YOU HAVE DONE JOB STEP 11, ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 12. GENTLY RAKE THE SEED INTO THE SOIL.

LOOK:

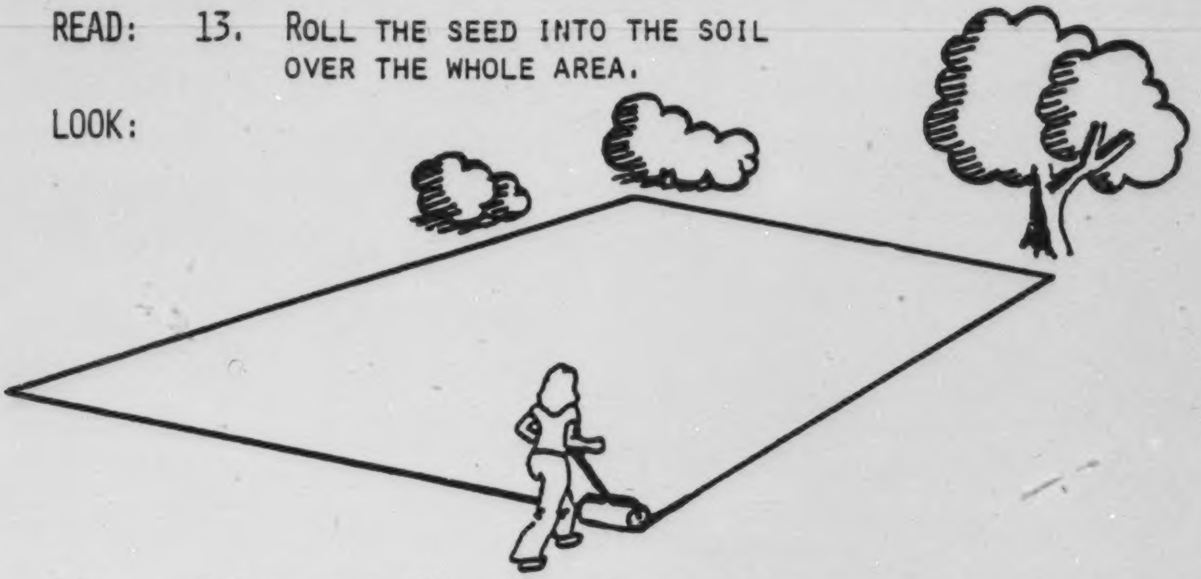


DO: DO JOB STEP 12.

"TURN THE PAGE"

READ: 13. ROLL THE SEED INTO THE SOIL OVER THE WHOLE AREA.

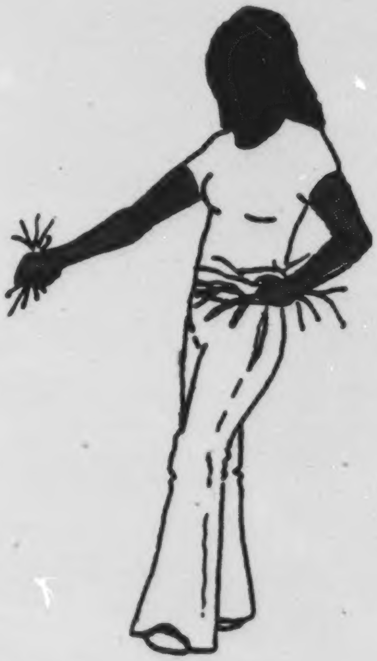
LOOK:



DO: DO JOB STEP 13. ASK YOUR INSTRUCTOR TO WATCH AS YOU BEGIN ROLLING.

READ: 14. SPREAD THE STRAW LIGHTLY OVER THE WHOLE AREA.

LOOK:

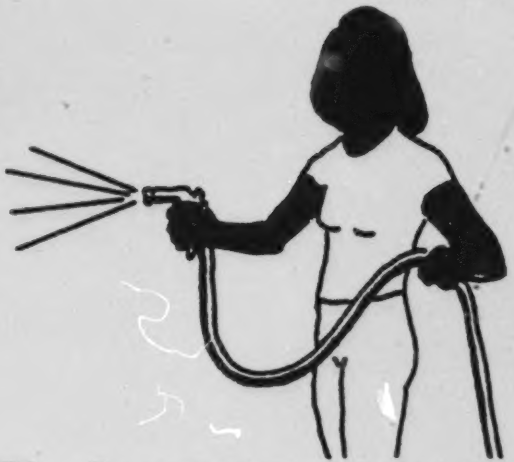


DO: DO JOB STEP 14.

"TURN THE PAGE"

READ: 15. USE THE GARDEN HOSE AND NOZZLE TO SPRINKLE WATER OVER THE WHOLE AREA. USE A FINE SPRAY.

LOOK:



NOTE: DO NOT MOW NEW GRASS UNTIL IT IS AT LEAST 3 INCHES TALL.

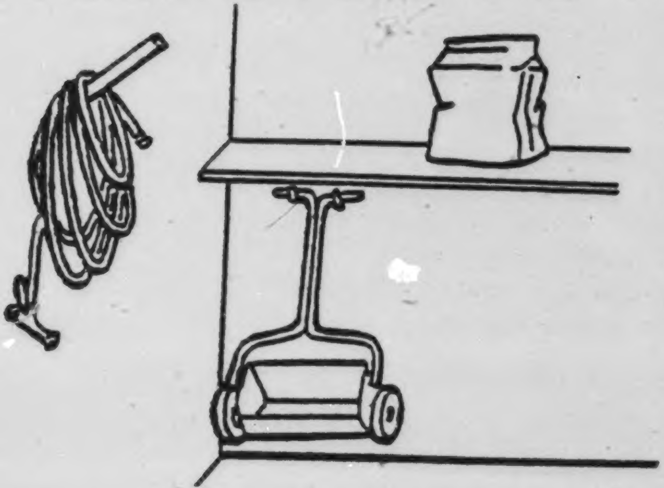
DO: DO JOB STEP 15.

READ: 16. RETURN ALL EQUIPMENT TO THE STORAGE AREA. BE SURE THAT ALL EQUIPMENT IS CLEANED.

YOU HAVE FINISHED READING AND DOING THE JOB STEPS FOR PLANTING A NEW LAWN.

DO: NOW DO THE FOLLOWING:

ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE CLEANED AND RETURNED ALL EQUIPMENT TO THE STORAGE AREA.



building maintenance & engineering

unit: GROUNDS MAINTENANCE

capital area career center

module: 2201 07 018 1 date: 3/20/77 level: 1

skill title: SETTING UP A TRANSIT

developed & written by: ALAN STEINBERG

visuals by: BEVAN SUITS

WORD GUIDE

TRANSIT - MAKES MEASUREMENTS AT FAR DISTANCES.

TRIPOD - 3-LEGGED SUPPORT FOR TRANSIT.

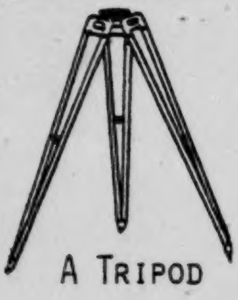
SIGHT - SOMETHING YOU LOOK THROUGH TO SEE OBJECTS.

PERFORMANCE OBJECTIVE

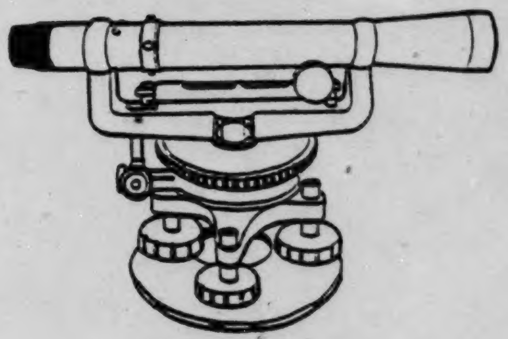
WHAT YOU ARE GOING TO LEARN:

HOW TO SET UP A TRANSIT.

WHAT YOU WILL NEED:



A TRIPOD



A TRANSIT

WHAT YOU MUST DO:

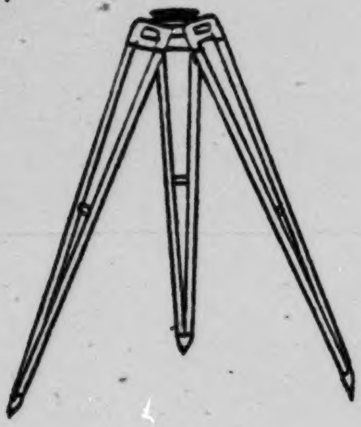
1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS FOR SETTING UP A TRANSIT.

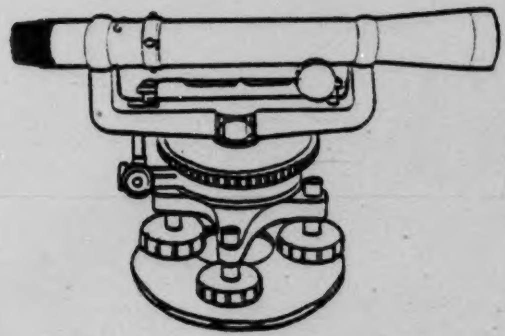
"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL EQUIPMENT.

LOOK:

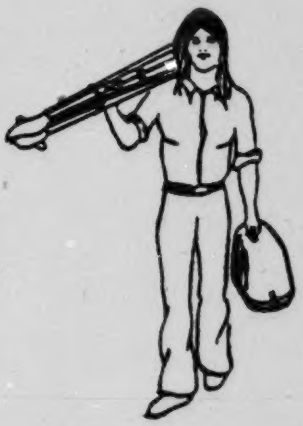




DO: DO JOB STEP 1.

READ: 2. TAKE IT TO AREA WHERE YOU WILL WORK.

LOOK:



DO: DO JOB STEP 2. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

"TURN THE PAGE"

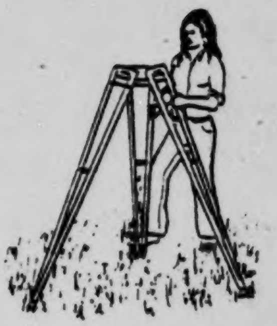
WORD GUIDE

WING NUTS - METAL PIECES WITH WING-LIKE HANDLES.

LEVEL - WELL-BALANCED, STEADY.

READ: 3. SET UP TRIPOD SO YOUR TRANSIT IS LEVEL.

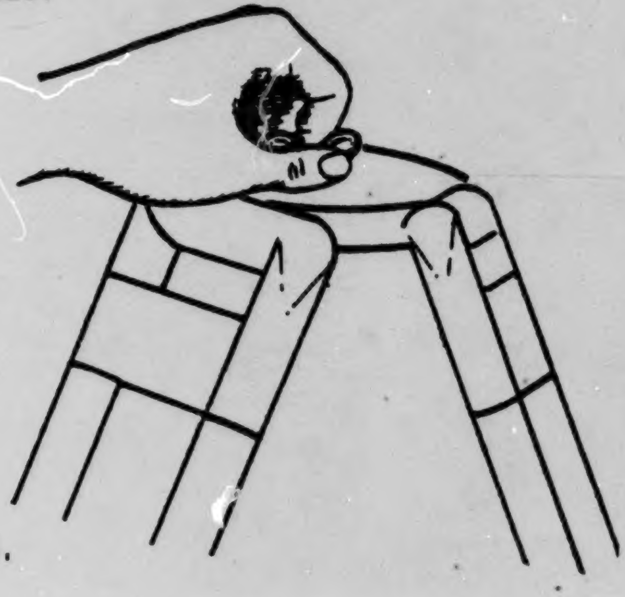
LOOK:



DO: DO JOB STEP 3. YOUR INSTRUCTOR WILL HELP.

READ: 4. TIGHTEN THE WING-NUTS AT TOP OF EACH LEG.

LOOK:



DO: DO JOB STEP 4.

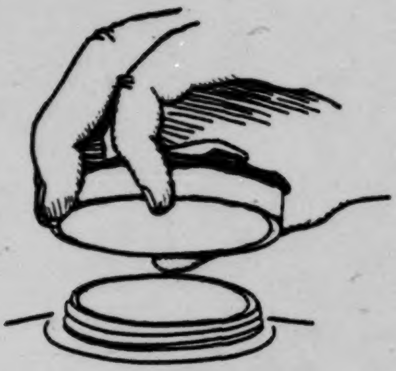
"TURN THE PAGE"

WORD GUIDE

COUNTER-CLOCKWISE - TO THE LEFT.

READ: 5. TAKE PLASTIC CAP OFF TOP OF TRIPOD. PUT IN CASE.

LOOK:



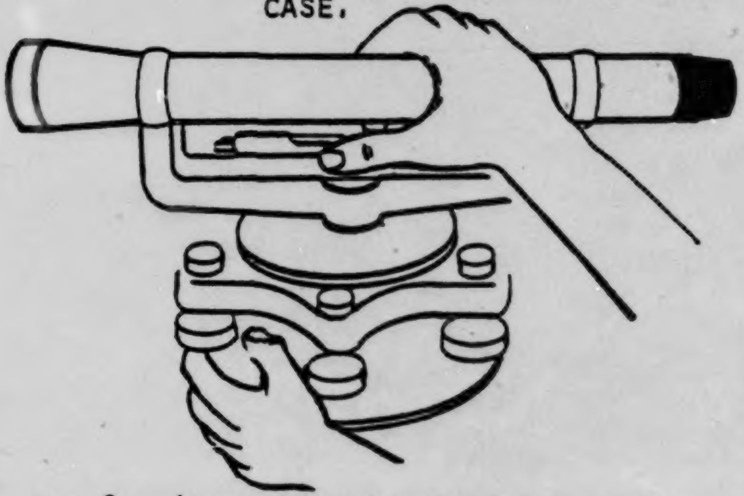
DO: DO JOB STEP 5.

CHECK: YOUR INSTRUCTOR WILL NOW CHECK TO BE SURE YOU HAVE:

1) PUT TOGETHER YOUR EQUIPMENT.
2) MADE YOUR TRANSIT LEVEL.
3) TIGHTENED WING-NUTS AND TAKEN OFF PLASTIC CAP.

READ: 6. USING BOTH HANDS, TURN BASE OF TRANSIT COUNTER-CLOCKWISE FROM CASE.

LOOK:



DO & CHECK: DO JOB STEP 6. ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEPS 6,7, AND 8.

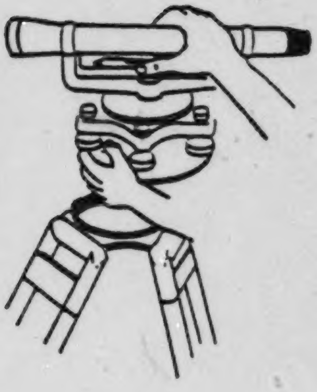
"TURN THE PAGE"

WORD GUIDE

CLOCKWISE - To THE RIGHT.

READ: 7. PUT TRANSIT ON TRIPOD MOUNTING-SCREW.

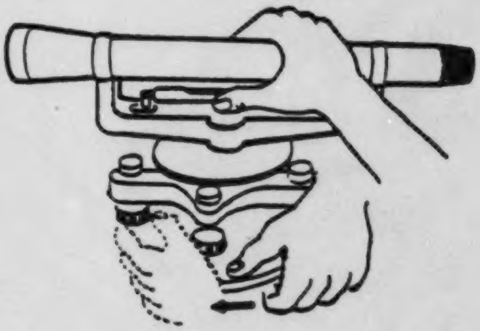
LOOK:



DO: Do JOB STEP 7.

READ: 8. TURN TRANSIT CLOCKWISE TO TIGHTEN.

LOOK:

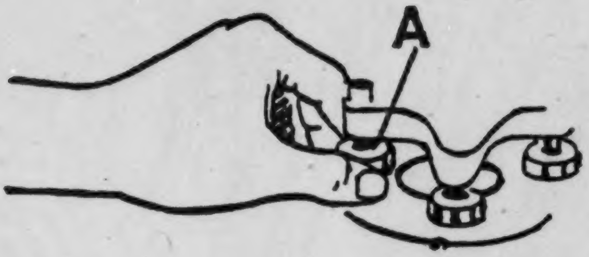


DO: Do JOB STEP 8.

"TURN THE PAGE"

READ: 9. TURN THUMB-SCREW MARKED "A" COUNTER-CLOCKWISE.

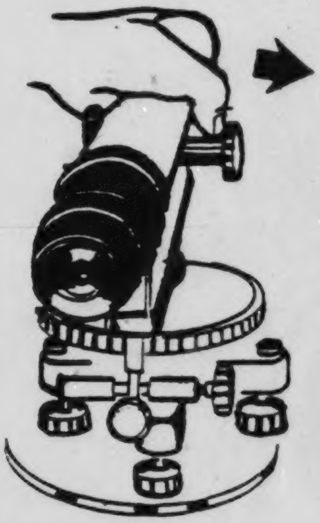
LOOK:



DO: DO JOB STEP 9.

READ: 10. TURN THE SIGHT-BARREL. THE SIGHT-BARREL SHOULD TURN EASILY IN ANY DIRECTION.

LOOK:

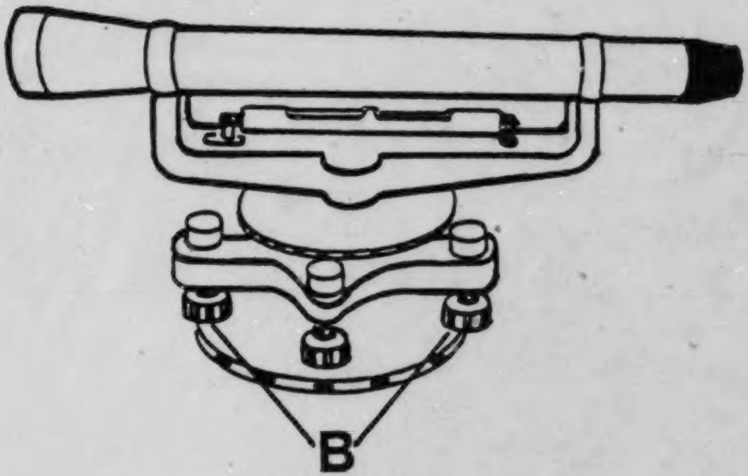


DO: DO JOB STEP 10.

"TURN THE PAGE"

READ: 11. TURN SIGHT-BARREL UNTIL IT LINES UP WITH THE 2 THUMB-SCREWS MARKED "B".

LOOK:

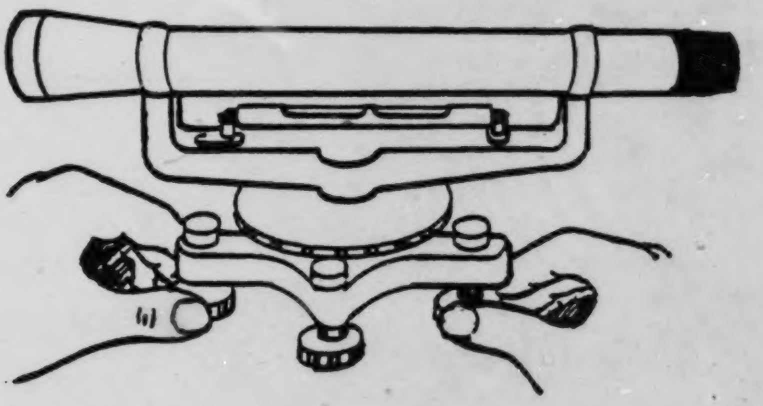


DO: Do JOB STEP 11.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEPS 11, 12, AND 13.

READ: 12. PUT ONE OF YOUR THUMBS ON EACH "B" THUMB-SCREW.

LOOK:

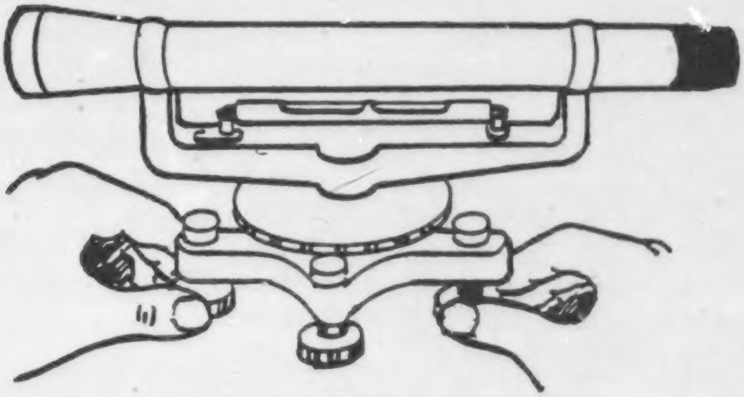


DO: Do JOB STEP 12.

"TURN THE PAGE"

READ: 13. TURN YOUR LEFT HAND SCREW CLOCKWISE AND TURN YOUR RIGHT HAND SCREW COUNTER-CLOCKWISE - AT THE SAME TIME.

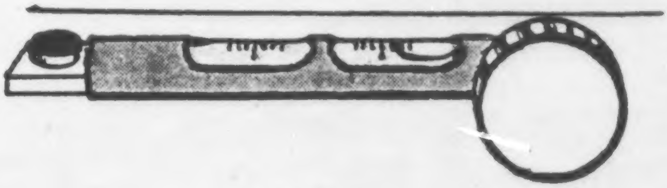
LOOK:



DO: DO JOB STEP 13.

READ: 14. LOOK AT THE BUBBLE UNDER THE SIGHT-BARREL.

LOOK:

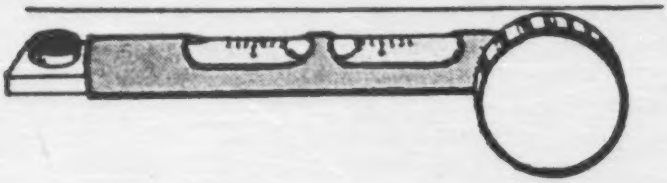


DO: DO JOB STEP 14.

"TURN THE PAGE"

READ: 15. KEEP TURNING THUMB-SCREWS UNTIL YOU SEE BUBBLE BETWEEN THE 2 DOTS.

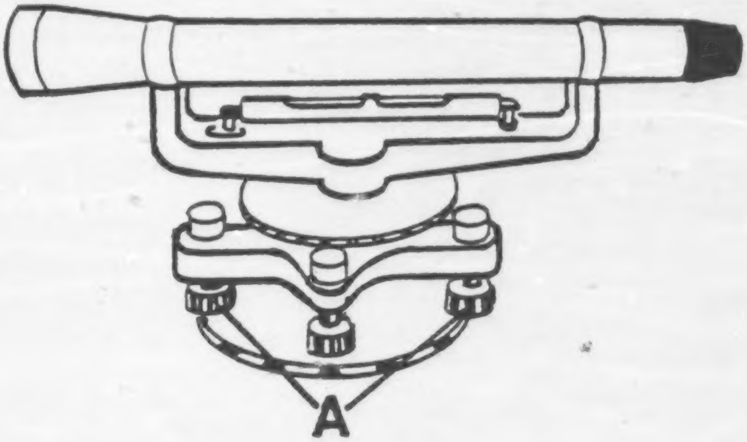
LOOK:



DO: DO JOB STEP 15.

READ: 16. TURN SIGHT-BARREL UNTIL YOU LINE IT UP WITH OTHER 2 THUMB-SCREWS.

LOOK:

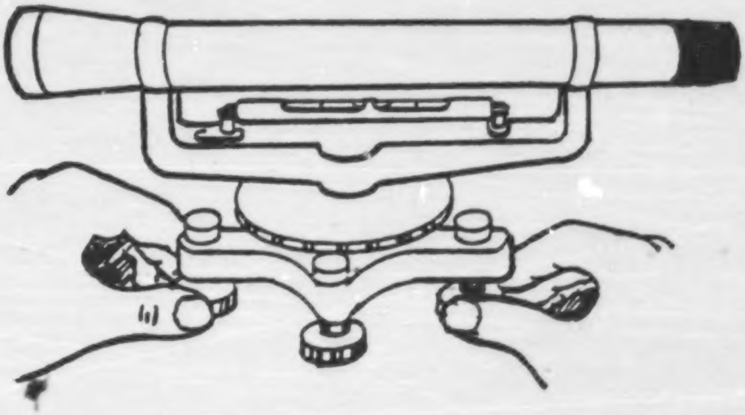


DO: DO JOB STEP 16.

"TURN THE PAGE"

READ: 17. TURN THUMB-SCREWS UNTIL YOU LINE UP BUBBLE BETWEEN 2 DOTS.

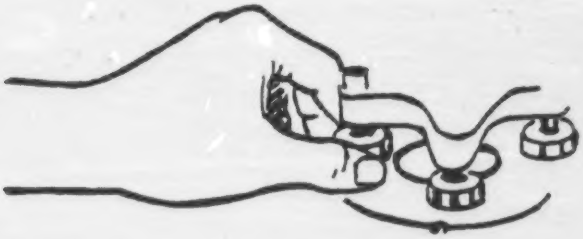
LOOK:



DO: Do JOB STEP 17.

READ: 18. KEEP TURNING BOTH SETS OF THUMB-SCREWS. LINE UP BUBBLE EACH TIME.

LOOK:

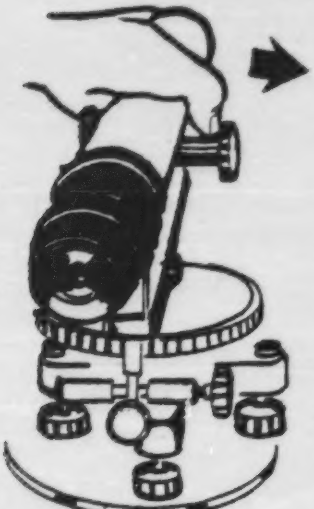


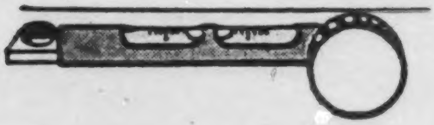
DO: Do JOB STEP 18.

"TURN THE PAGE"

READ: 19. Turn sight-barrel all the way around. Make sure you keep bubble between 2 dots.

LOOK:





DO: Do job step 19.

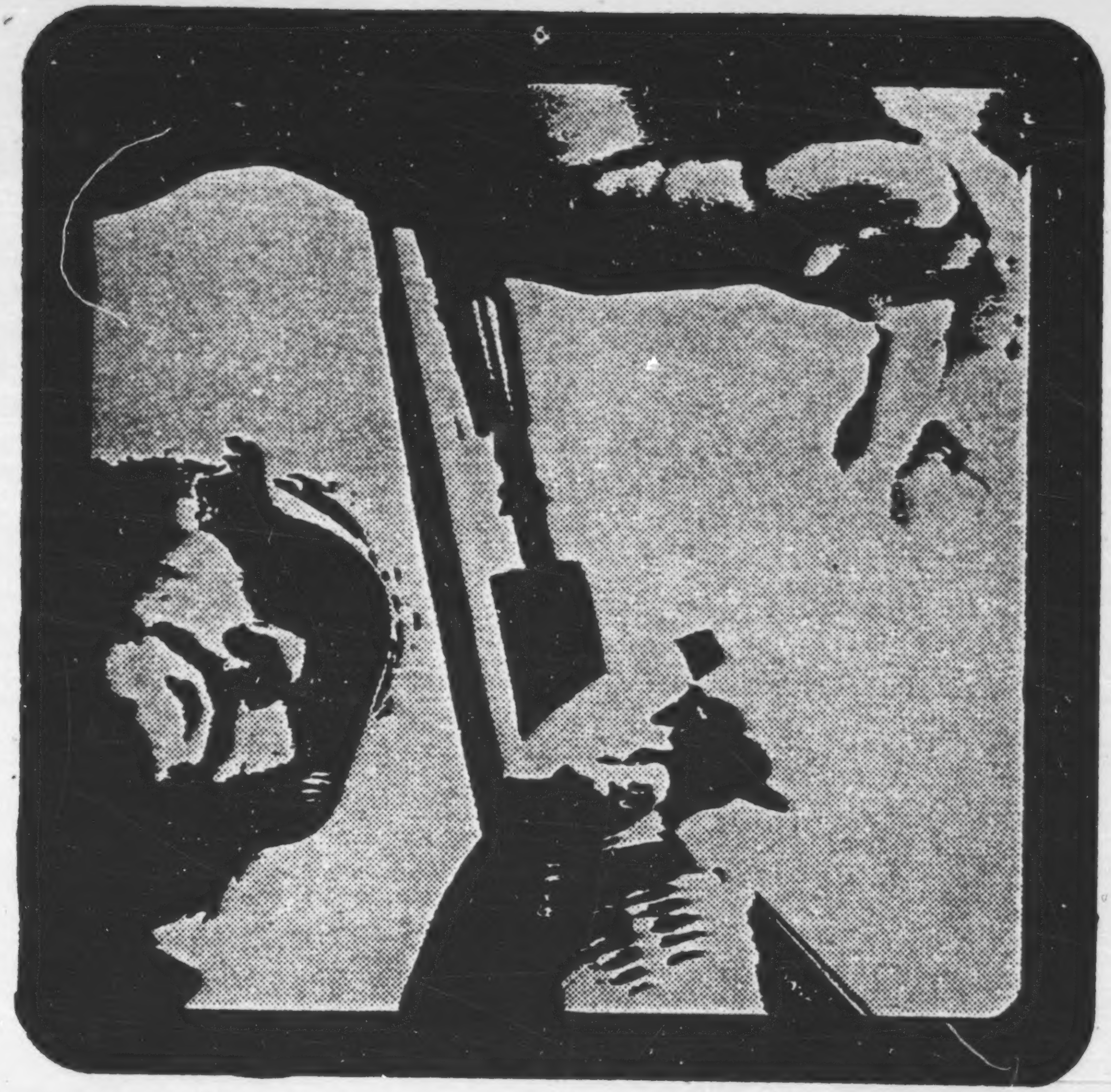
CHECK: Ask your instructor to check your work. He/she will also check transit level.

READ: 20. Return all equipment. Be sure all equipment is cleaned.

You have finished reading and doing the job steps for setting up a transit.

DO: NOW DO THE FOLLOWING:

Ask your instructor to check that you have cleaned and returned all equipment.



building maintenance & engineering

unit: GROUNDS AND MAINTENANCE

capital area career center

module: 2201 07 019 1 date: 4/77 level: ______

skill title: EDGING A LAWN

developed & written by: DEBORAH J. LIVINGSTON-WHITE

visuals by: SANDRA GOSTOMSKI

WORD GUIDE

EDGE - CUT GRASS ALONG LAWN AND SIDEWALK; WHERE THE GRASS AND SIDEWALK MEET.

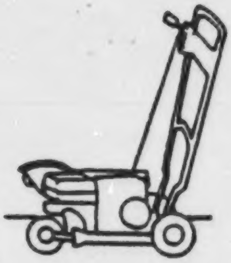
CLIPPINGS - CUT GRASS.

PERFORMANCE OBJECTIVE

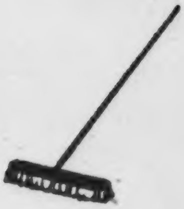
WHAT YOU WILL LEARN:

HOW TO EDGE A LAWN.

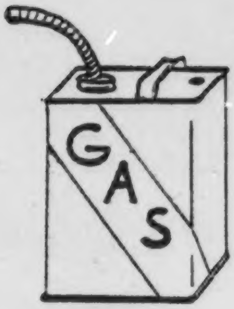
WHAT YOU WILL NEED:



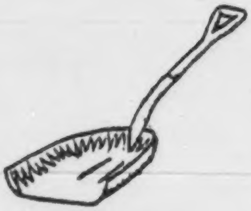
LAWN EDGER



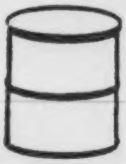
BROOM



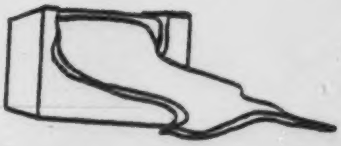
GASOLINE



FLAT SHOVEL



WASTE CAN



TRASH BAG LINERS

WHAT YOU MUST DO:

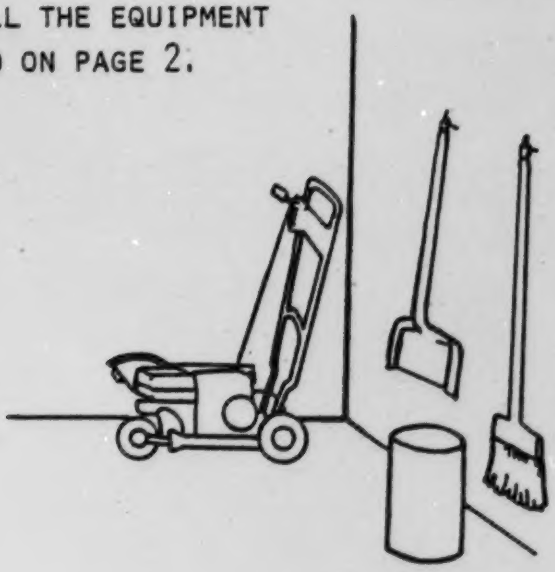
1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS FOR EDGING A LAWN.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL THE EQUIPMENT LISTED ON PAGE 2.

LOOK:

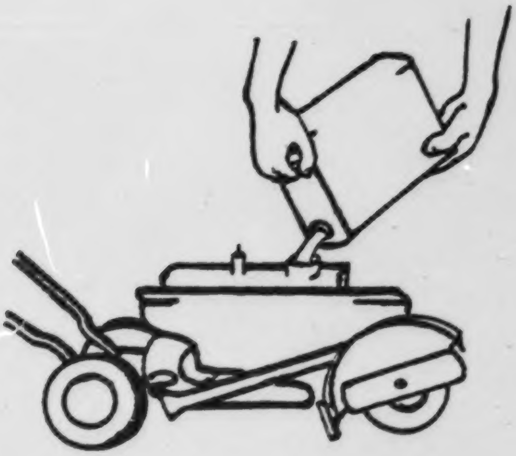


DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE ALL THE EQUIPMENT IN THE PICTURE.

READ: 2. FILL GAS TANK WITH GASOLINE.

LOOK:



DO: DO JOB STEP 2.

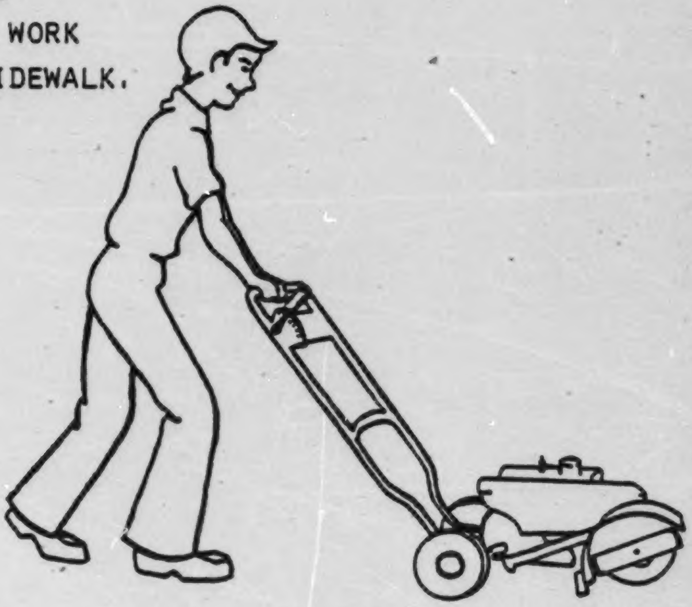
CHECK: HAVE YOUR INSTRUCTOR HELP YOU FILL THE GASOLINE TANK.

"TURN THE PAGE"

JOB STEPS

READ: 3. GO TO THE PLACE WHERE YOU WILL WORK AND EDGE THE SIDEWALK.

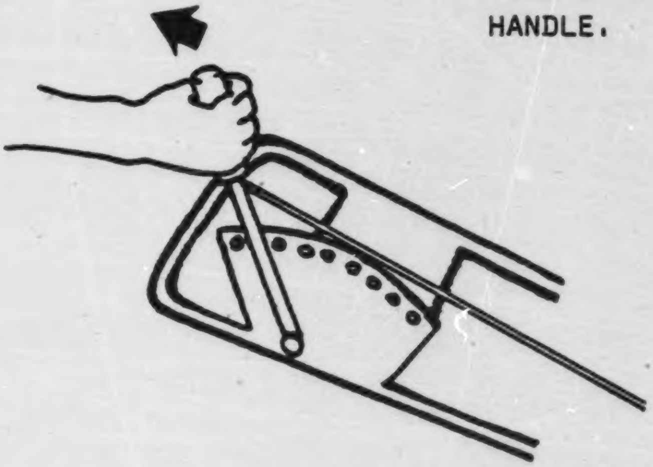
LOOK:



DO: DO JOB STEP 3. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

READ: 4. PULL UP LEVER ON HANDLE.

LOOK:



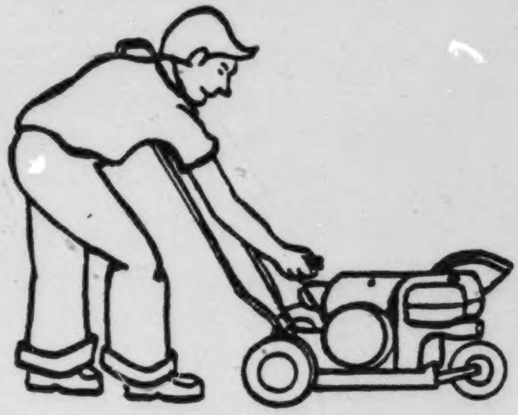
DO: DO JOB STEP 4.

"TURN THE PAGE"

JOB STEPS

READ: 5. START THE ENGINE BY PULLING THE ROPE.

LOOK:

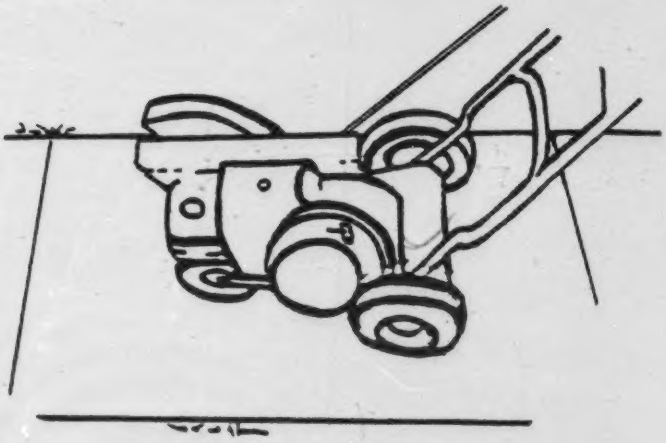


DO: DO JOB STEP 5.

CHECK: IF THE ENGINE DOESN'T START, SEE YOUR INSTRUCTOR.

READ: 6. STAND THE EDGER SO THAT 3 WHEELS ARE ON THE SIDEWALK.

LOOK:



DO: DO JOB STEP 6.

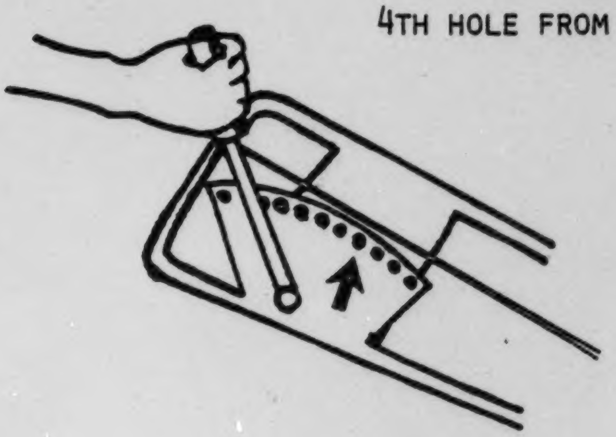
CHECK: ASK YOUR INSTRUCTOR TO CHECK THE EDGER TO SEE IF YOU HAVE IT IN THE RIGHT PLACE.

"TURN THE PAGE"

JOB STEPS

READ: 7. TO LOWER THE CUTTING BLADE, PULL THE LEVER TO THE LEFT. THEN, PUT THE LEVER IN THE 4TH HOLE FROM THE BOTTOM.

LOOK:



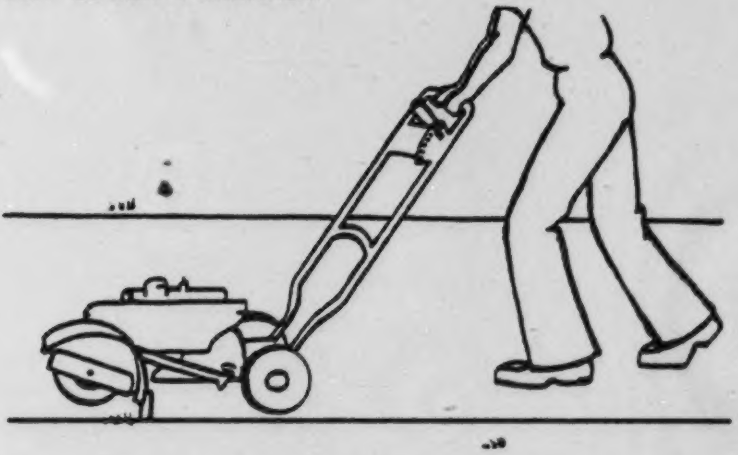
LEVER IS UP LEVER IS IN 4TH HOLE FROM BOTTOM

DO: DO JOB STEP 7.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

READ: 8. SLOWLY PUSH EDGER FORWARD.

LOOK:



DO: DO JOB STEP 8.

CHECK: SEE THAT YOU KEEP THE GUIDE ON THE EDGE OF THE SIDEWALK OR DRIVEWAY.

STOP WHEN YOU COME TO A CROSS WALK. DO NOT LET THE BLADE HIT THE SIDEWALK.

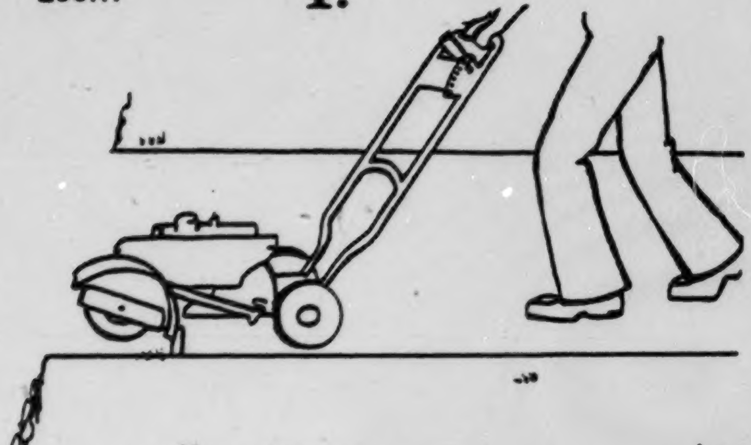
"TURN THE PAGE"

JOB STEPS

READD: 9. WHEN YOU COME TO A CROSSWALK, STOP!!! TO LIFT THE CUTTER BLADE, PULL LEVER UP. THEN MOVE EDGER TO OTHER SIDE OF SIDEWALK.

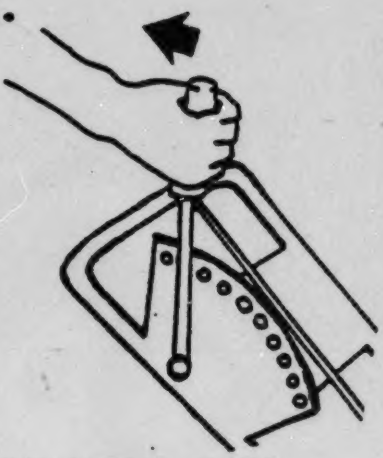
LOOK:

1.



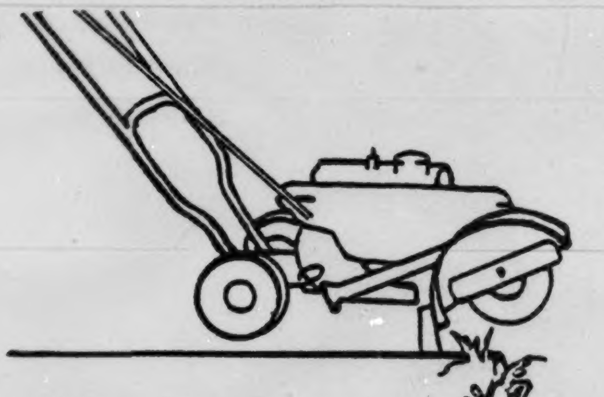
YOU COME TO A CROSSWALK - STOP!!!

2.



LIFT THE CUTTER BLADE. PULL THE LEVER UP.

3.



MOVE EDGER TO OTHER SIDE OF SIDEWALK.

DO: DO JOB STEP 9.

CHECK: HAVE YOUR INSTRUCTOR WATCH YOU EDGE THE SIDEWALK OR DRIVEWAY.

"TURN THE PAGE"

JOB STEPS

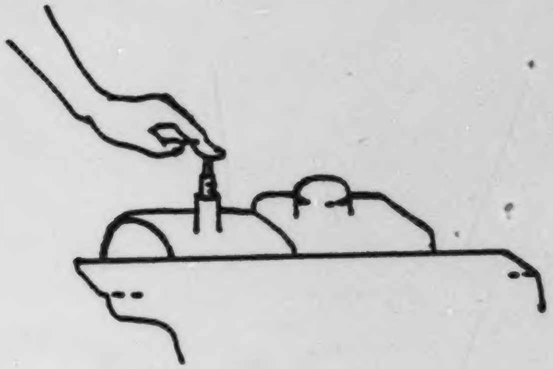
READ: 10. REPEAT JOB STEPS 6, 7, 8, AND 9.

DO: DO JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU. DO ALL THE EDGING YOUR INSTRUCTOR TELLS YOU TO DO.

READ: 11. STOP THE ENGINE.

LOOK:

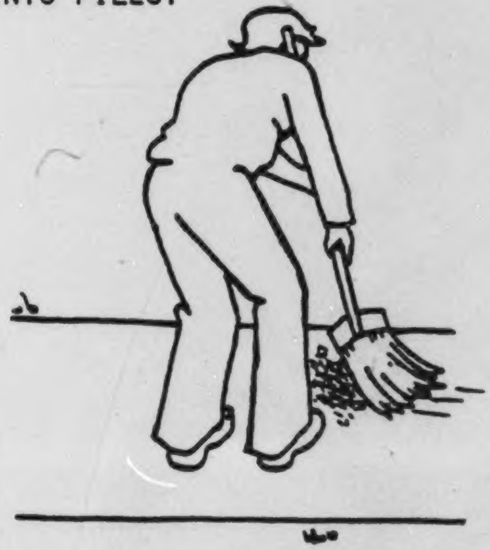


DO: DO JOB STEP 11.

CHECK: THE ENGINE SHOULD STOP.

READ: 12. USING THE BROOM, SWEEP CLIPPINGS INTO PILES.

LOOK:



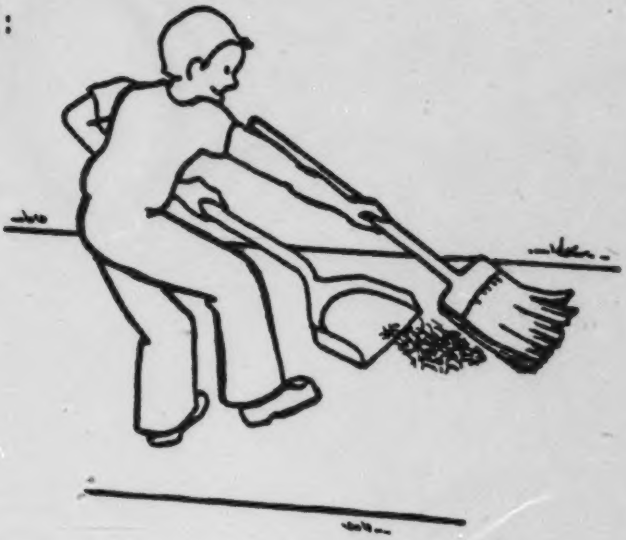
DO: DO JOB STEP 12.

"TURN THE PAGE"

JOB STEPS

READ: 13. SWEEP GRASS CLIPPINGS ONTO YOUR FLAT SHOVEL. CARRY THE SHOVEL TO THE WASTE CAN. PUT THE CLIPPINGS IN THE CAN.

LOOK:



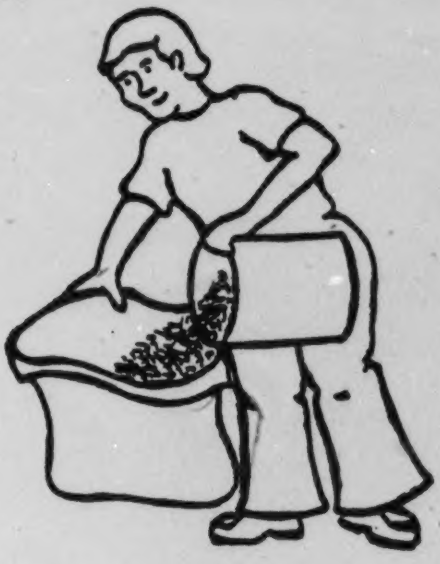
DO: DO JOB STEP 13.

CHECK: ALL CLIPPINGS SHOULD BE IN THE WASTE CAN. ASK YOUR INSTRUCTOR TO COME LOOK AT YOUR WORK.

JOB STEPS

READ: 14. DUMP WASTE INTO PLASTIC BAGS.

LOOK:

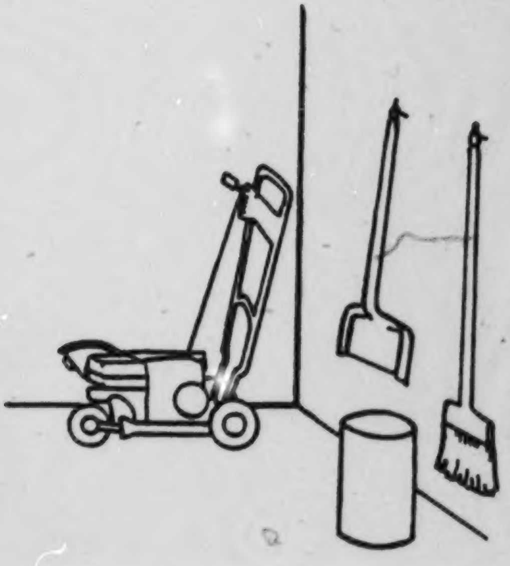


DO: DO JOB STEP 14.

CHECK: ASK YOUR INSTRUCTOR WHERE HE/SHE WANTS YOU TO DUMP THE CANS AND PUT THE PLASTIC BAGS.

READ: 15. PUT ALL OF YOUR EQUIPMENT AWAY - EDGER, WASTE CAN, PUSH BROOM, AND SHOVEL.

LOOK:



DO: DO JOB STEP 15.

CHECK: ASK YOUR INSTRUCTOR TO CHECK TO SEE THAT YOU PUT ALL EQUIPMENT AWAY.

building maintenance & engineering

unit: MAINTENANCE

capital area career center

module: 2201 08 001 1 **date:** 1/21/77 **level:** 2

skill title: PICKING UP PAPER AND TRASH

developed & written by: DWIGHT SMITH

visuals by: DAVE WEHRWEIN

WORD GUIDE

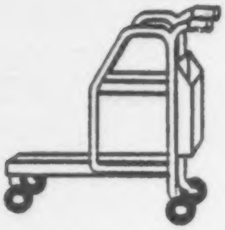
NONCOMBUSTIBLE - THINGS THAT DO NOT BURN.

PERFORMANCE OBJECTIVE

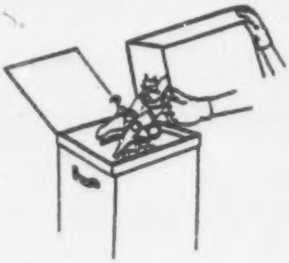
WHAT YOU WILL LEARN:

HOW TO PICK UP TRASH AND PAPERS.

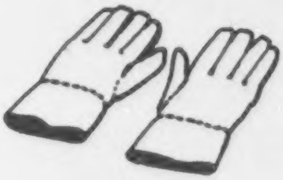
WHAT YOU WILL NEED:



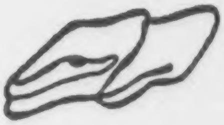
4 WHEEL PUSH CART



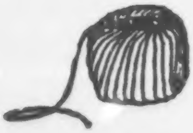
CONTAINER FOR NONCOMBUSTIBLE TRASH



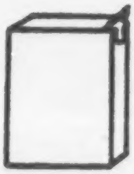
GLOVES



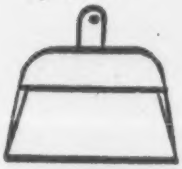
WIPING CLOTHS



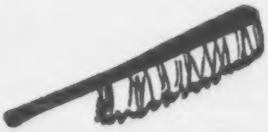
TWINE



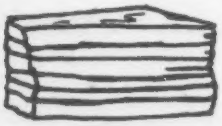
DETERGENT



DUST PAN



DUST PAN BRUSH



TRASH BAG LINERS

WHAT YOU MUST DO:

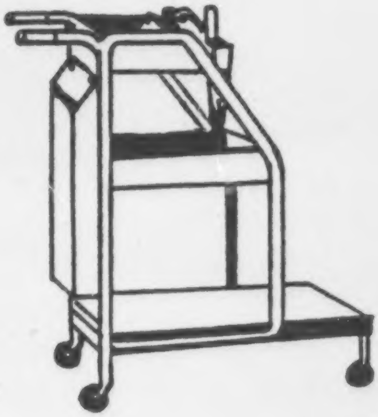
1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS FOR PICKING UP PAPERS AND TRASH.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL THE EQUIPMENT LISTED ON PAGE 2.

LOOK:

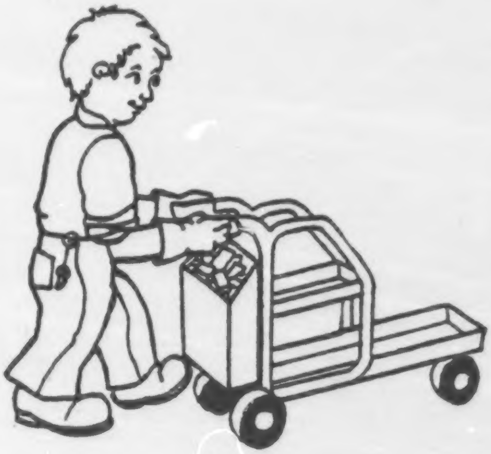


DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO SEE IF YOU HAVE ALL THE EQUIPMENT IN THE PICTURE.

READ: 2. TAKE THE EQUIPMENT TO THE WORK AREA YOU WILL CLEAN.

LOOK:



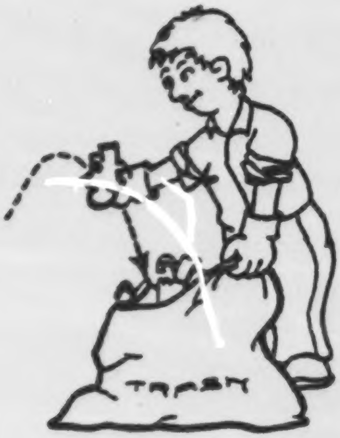
DO: DO JOB STEP 2. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

"TURN THE PAGE"

JOB STEPS

READ: 3. PICK UP ALL TRASH IN TRASH BAGS.

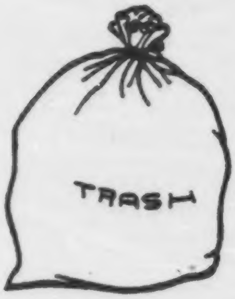
LOOK:



DO: DO JOB STEP 3.

READ: 4. TIE EACH BAG WITH TWINE.

LOOK:



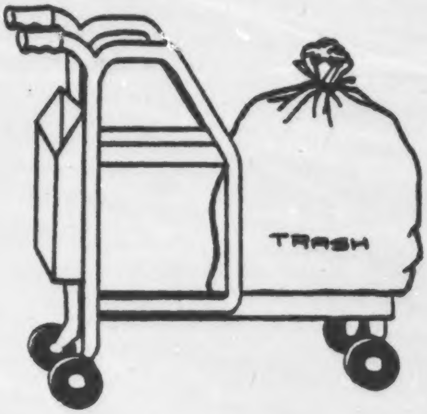
DO: DO JOB STEP 4 SO THE BAGS DO NOT SPILL.

"TURN THE PAGE"

JOB STEPS

READ: 5. PUT THE TIED BAG ON THE PUSH CART.

LOOK:

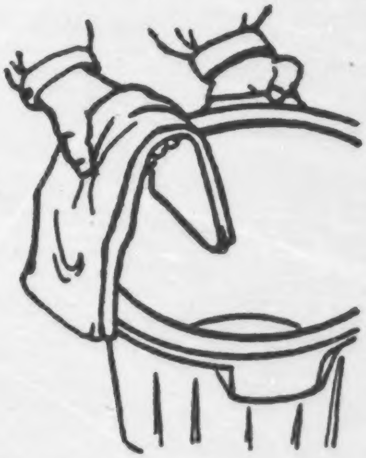


DO: DO JOB STEP 5.

CHECK: CHECK TO SEE IF YOU GOT ALL THE BAGS OF TRASH.

READ: 6. PUT A NEW TRASH BAG LINER IN EACH WASTE BASKET.

LOOK:



DO: DO JOB STEP 6.

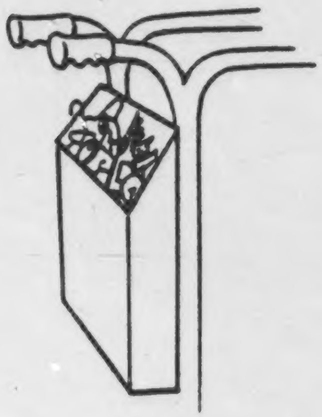
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 7. PICK UP ALL NONCOMBUSTIBLE TRASH. PUT IT IN THE TRASH CAN ON THE PUSH CART.

LOOK:



DO: DO JOB STEP 7.

****

CAUTION

1. ALWAYS WEAR GLOVES.
2. DO NOT TAKE PUSH CARTS INTO OFFICES.
3. BE CAREFUL WITH BROKEN GLASS.

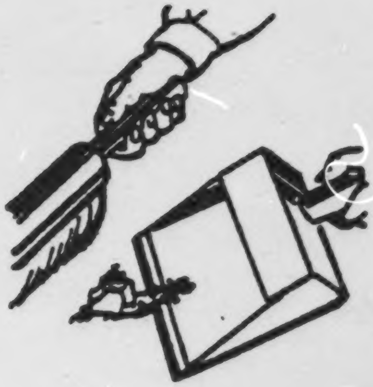
****

"TURN THE PAGE"

JOB STEPS

READ: 8. Pick up spilled trash with dust pan and dust pan brush.

LOOK:

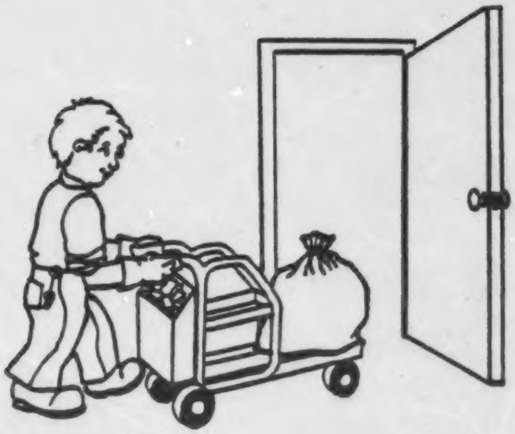


DO: Do job step 8.

CHECK: Ask your instructor to check your work.

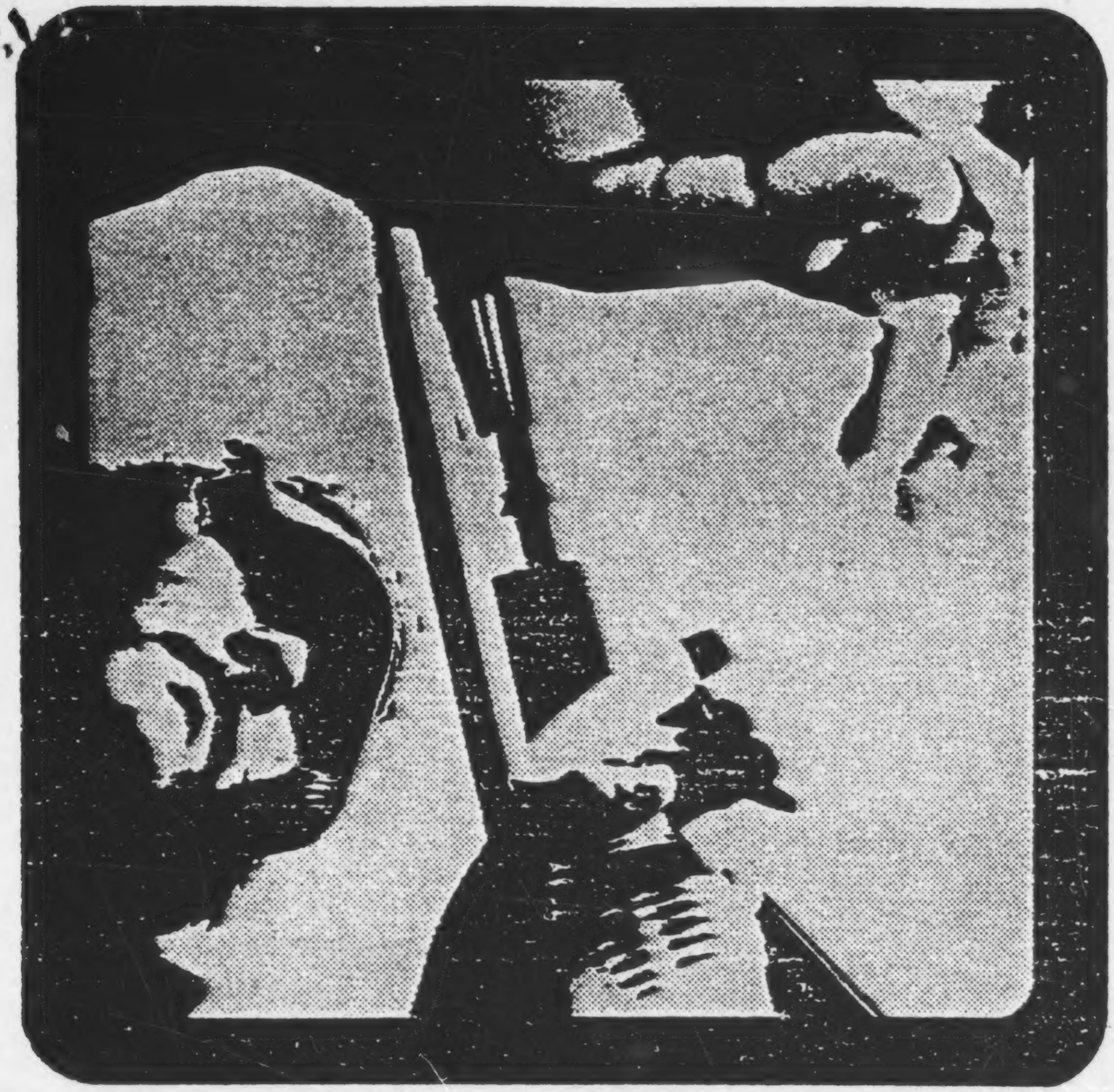
READ: 9. Take the trash and the equipment to the trash room.

LOOK:



DO: Do job step 9.

You have just done the Job Steps for picking up papers and trash. Good Job!



building maintenance & engineering

unit: MAINTENANCE

capital area career center

module: 2201 08 002 1 date: 1-21-77 level: 2

skill title: PAPER AND TRASH DISPOSAL

developed & written by: DWIGHT SMITH

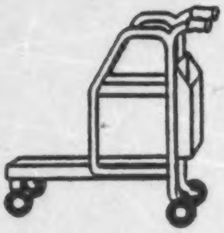
visuals by: DAVE WEHRWEIN

PERFORMANCE OBJECTIVE

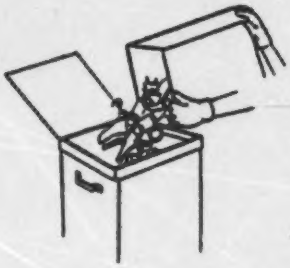
WHAT YOU WILL LEARN:

HOW TO GET RID OF PAPERS AND TRASH.

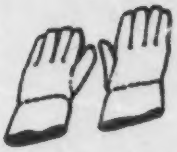
WHAT YOU WILL NEED:



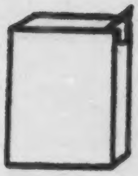
4 WHEEL PUSH CART



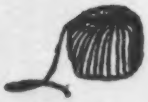
CONTAINER FOR METAL OR GLASS TRASH



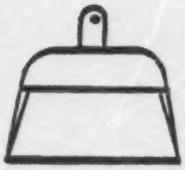
GLOVES



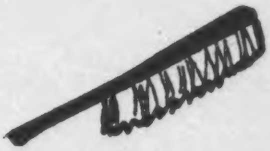
DETERGENT



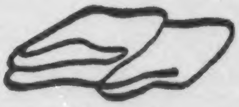
TWINE



DUST PAN



DUST PAN BRUSH



WIPING CLOTHS

WHAT YOU MUST DO:

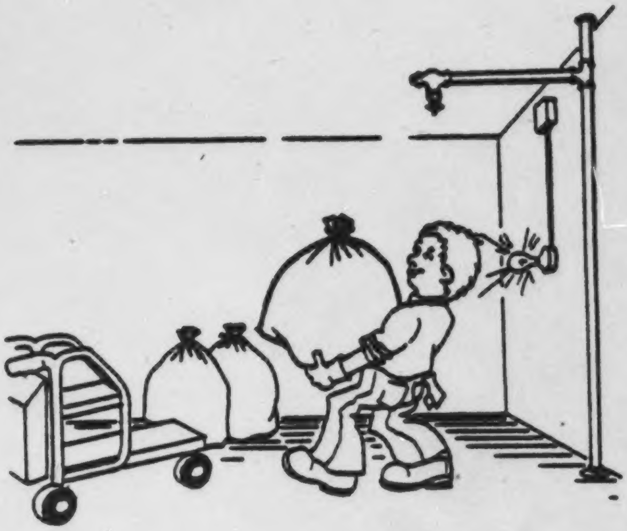
1. READ THE MODULE.
2. GET YOUR EQUIPMENT.
3. DO THE JOB STEPS.

"TURN THE PAGE"

JOB STEPS

READ: 1. TAKE THE FULL TRASH BAGS OFF THE PUSH CART AND STACK THEM UP.

LOOK:



```
*****************************************************
* CAUTION:  STACK BAGS AT LEAST 2 FEET              *
* FROM ALL LIGHTS, PIPES AND SPRINKLERS.            *
*                                                   *
*****************************************************
```

DO: DO JOB STEP 1.

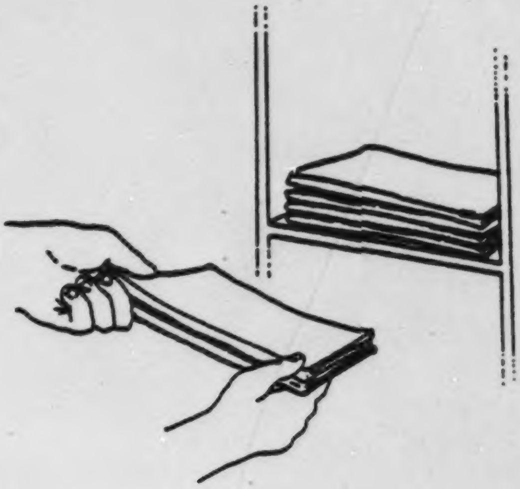
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 2. PUT UNUSED TRASH BAGS WHERE THEY BELONG.

LOOK:

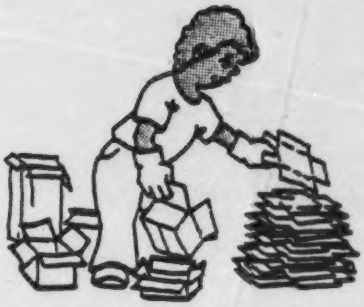


DO: DO JOB STEP 2.

CHECK: CHECK TO SEE THAT YOU PUT ALL THE BAGS AWAY.

READ: 3. BREAK DOWN ALL CARDBOARD BOXES.

LOOK:



DO: DO JOB STEP 3.

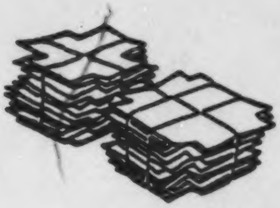
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 4. STACK UP THE FLAT BOXES.

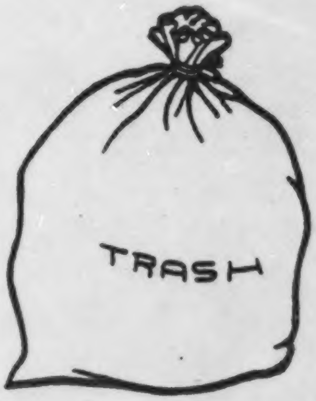
LOOK:



DO: DO JOB STEP 4.

READ: 5. TIE THE BAGS UP WITH TWINE.

LOOK:



DO: DO JOB STEP 5.

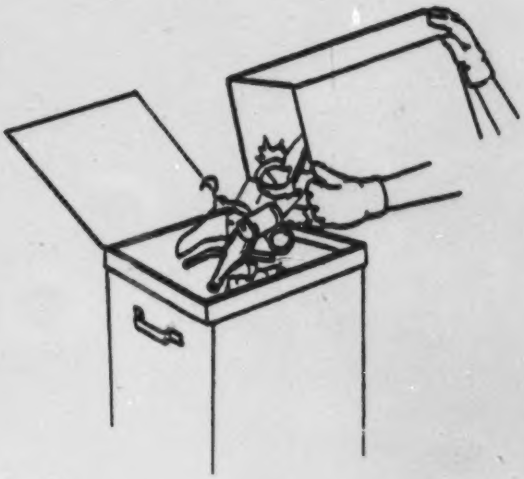
CHECK: YOUR INSTRUCTOR WILL CHECK TO SEE IF THE BOXES AND BAGS ARE TIED.

"TURN THE PAGE"

JOB STEPS

READ: 6. EMPTY THE METAL AND GLASS TRASH INTO THE PROPER PLACE. ASK YOUR INSTRUCTOR TO SHOW YOU WHERE.

LOOK:

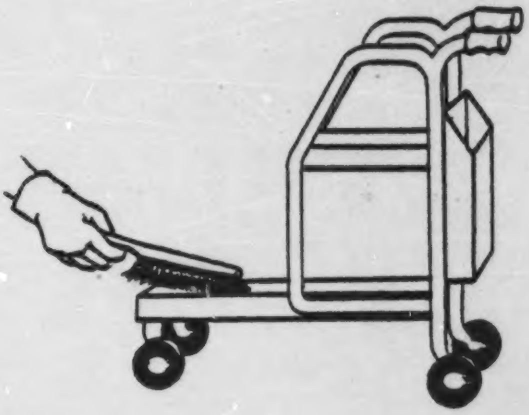


DO: DO JOB STEP 6.

CHECK: YOUR INSTRUCTOR WILL HELP YOU.

READ: 7. USE THE DUST PAN BRUSH TO SWEEP OUT THE PUSH CART.

LOOK:



DO: DO JOB STEP 7.

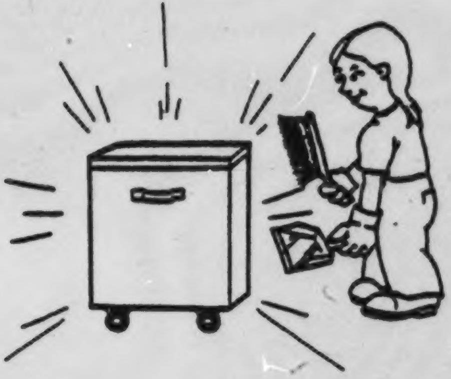
CHECK: YOUR INSTRUCTOR WILL CHECK FOR DIRT OR TRASH IN THE PUSH CART.

"TURN THE PAGE"

JOB STEPS

READ: 8. CLEAN THE DUST PAN, THE DUST PAN BRUSH AND THE TRASH CONTAINER. PUT THEM AWAY IN THE RIGHT PLACE.

LOOK:

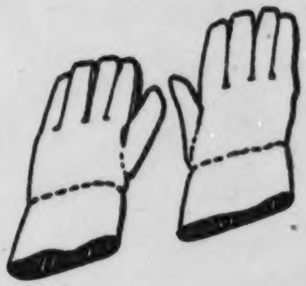


DO: DO JOB STEP 8.

CHECK: CHECK THE EQUIPMENT FOR DIRT, YOUR INSTRUCTOR WILL CHECK TO SEE YOU PUT IT AWAY IN THE RIGHT PLACE.

READ: 9. BRUSH THE DUST OFF THE GLOVES AND PUT THEM AWAY.

LOOK:



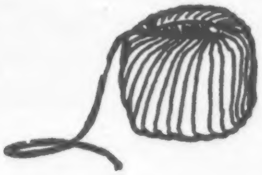
DO: DO JOB STEP 9.

"TURN THE PAGE"

JOB STEPS

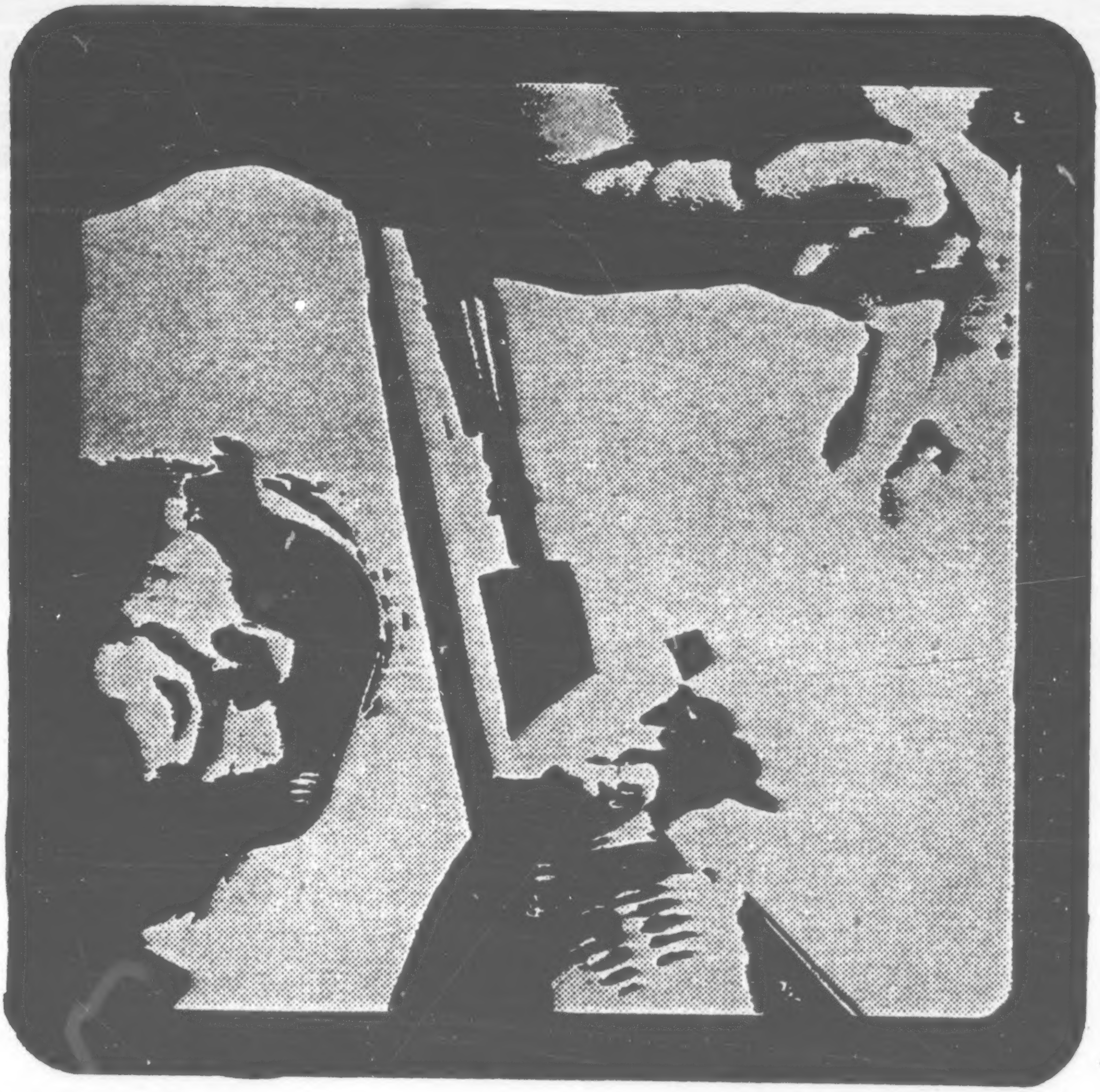
READ: 10. PUT THE BALL OF TWINE AWAY.

LOOK:



DO: DO JOB STEP 10.

CHECK: YOUR INSTRUCTOR WILL CHECK YOUR WORK.



building maintenance & engineering

unit: Steam Boiler Maintenance & Operation

capital area career center

module: 2201 10 001 1 date: 5/77 level:

skill title: Fire Low Pressure Steam Boiler

developed & written by: Deborah J. White

visuals by: Sandra Starnaman

WORD GUIDE

FIRE - To LIGHT A BOILER.

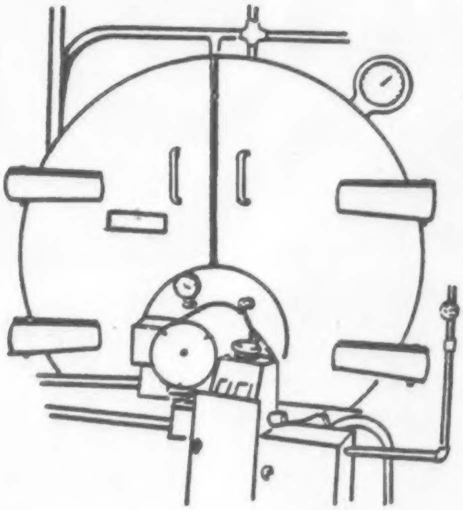
LIMIT PRESSURE - THE MOST PRESSURE POSSIBLE.

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

HOW TO SAFELY FIRE A LOW PRESSURE STEAM BOILER.

WHAT YOU WILL NEED:



A STEAM BOILER TO WORK ON

WHAT YOU MUST DO:

1. READ THIS MODULE. DO THE JOB STEPS.
2. BRING THE BOILER TO LIMIT PRESSURE THREE TIMES.

"TURN THE PAGE"

WORD GUIDE

PSI - Pressure measured in
Pounds per Square Inch.

INFORMATION

Firing a boiler can be dangerous. You must think about safety all the time. You must know where to find the boiler gas supply valve. If anything seems wrong, shut off the boiler gas supply valve and then get expert help. Tell your instructor what you will do if something seems wrong with the boiler.

What can go wrong with the boiler?

1. The boiler may not have water in it. It will get very hot and can start a fire.
2. Pressure may go too high. The pressure should shut off when it goes to 10 PSI.
3. The boiler may make loud sounds.
4. The boiler may rock backward and forward on the floor.

CHECK: If the boiler does any of these things, shut off the gas supply valve. Then, get expert help!!!

Tell your instructor what can go wrong with a boiler and what you will do.

There are 4 kinds of fuel. Fuel is something burned to make heat.

1. Coal - used in old boilers.
2. Oil - used when there is no gas.
3. Natural gas - used in most steam boilers.
4. Nuclear - used in most electrical plants.

"Turn the page"

WORD GUIDE

STEAM BOILER - A SEALED UNIT WHERE WATER IS HEATED TO MAKE HEAT; THERE ARE 2 KINDS:

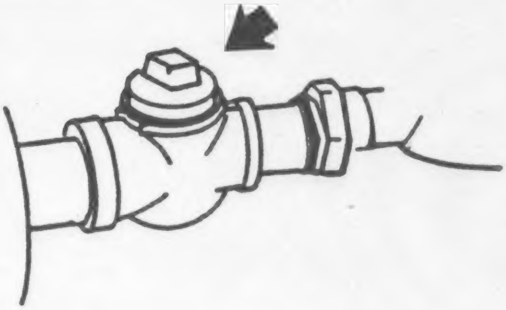
LOW PRESSURE - BELOW 15 PSI (POUNDS PER SQUARE INCH) - THIS KIND IS USED IN SCHOOLS, MOST OF THE TIME.

HIGH PRESSURE BOILERS - ABOVE 15 PSI.

JOB STEPS

READ: 1. FIND THE GAS SUPPLY VALVE.
REMEMBER WHERE IT IS.

LOOK:



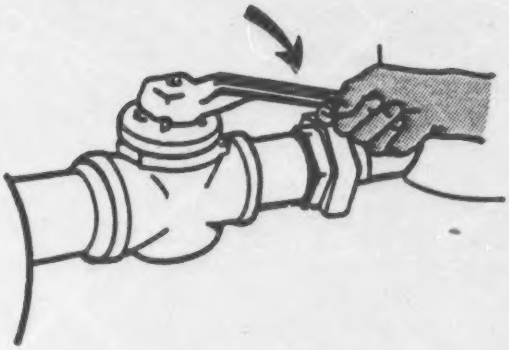
DO: DO JOB STEP 1.

CHECK: THE GAS SHUT OFF IS ALONG THE FRONT OF THE BOILER. SHOW IT TO YOUR INSTRUCTOR.

"TURN THE PAGE"

READ: 2. Turn off gas supply valve.

LOOK:



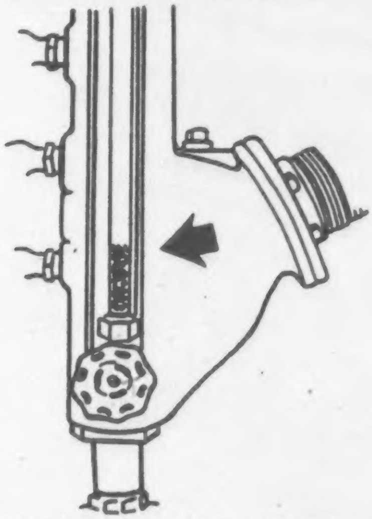
ON Turn it OFF.

DO: Do job step 2.

CHECK: The lever should be like the one in the picture.

READ: 3. On the upper part of boiler, find the sight glass. See the water level on the picture.

LOOK:



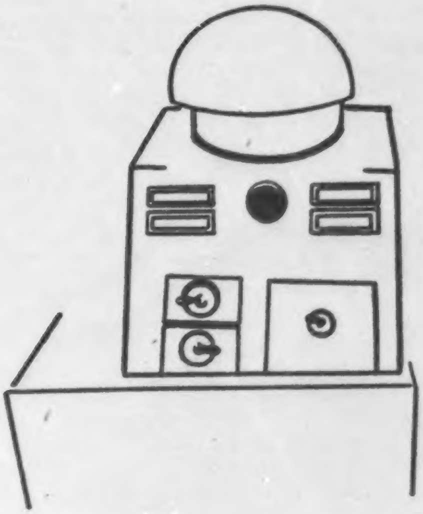
DO: Do job step 3.

CHECK: Show your instructor the sight glass, and this picture. Be sure to mark the picture. (Water level should be about 1/3 up the sight glass).

"Turn the page"

READ: 4. FIND THE BOILER CONTROL PANEL. IT IS IN THE LOWER FRONT OF THE BOILER.

LOOK:

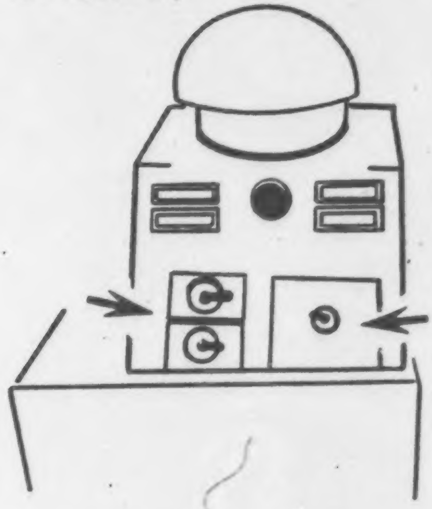


DO: Do JOB STEP 4.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOU.

READ: 5. TURN OFF ALL SWITCHES ON THE CONTROL PANEL (LOWER FRONT OF BOILER).

LOOK:



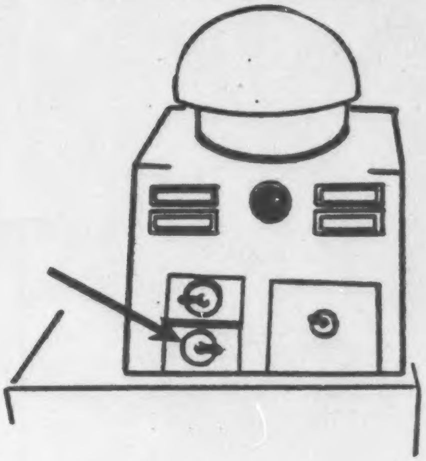
DO: Do JOB STEP 5.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

"TURN THE PAGE"

READ: 6. TURN "LOW FIRE - "HIGH FIRE" SWITCH ON CONTROL PANEL TO "LOW FIRE". (IF YOUR BOILER HAS THIS SWITCH).

LOOK:

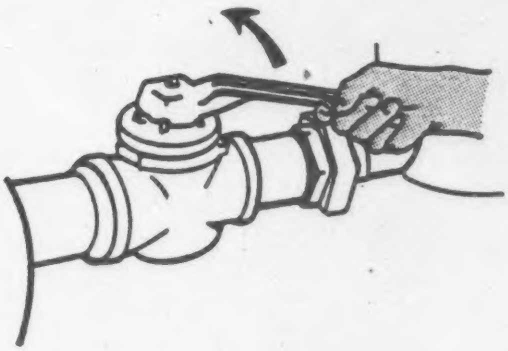


DO: DO JOB STEP 6.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOU.

READ: 7. TURN ON THE GAS SUPPLY VALVE.

LOOK:



DO: DO JOB STEP 7.

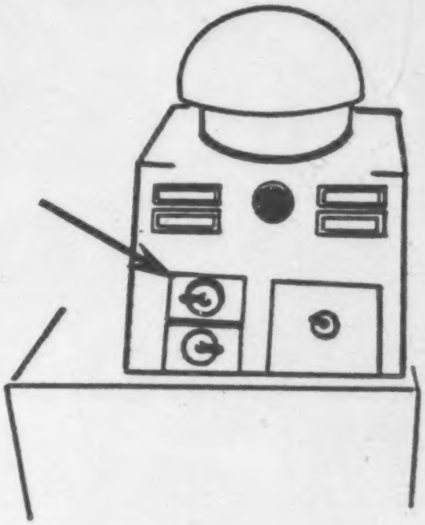
CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

NOTICE THAT THE GAS VALVE RUNS THE SAME WAY AS THE PIPE WHEN IT IS "ON".

"TURN THE PAGE"

READ: 8. TURN ON CONTROL SWITCH.

LOOK:

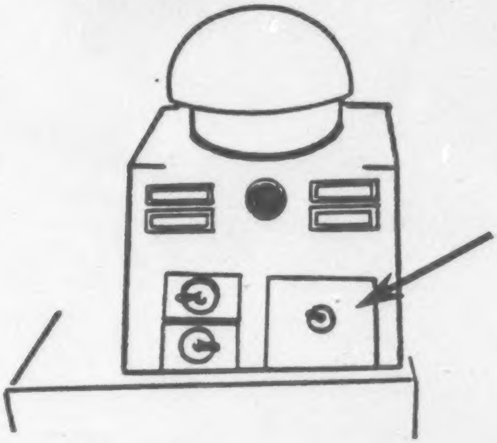


DO: DO JOB STEP 8.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

READ: 9. TURN ON THE BURNER (OR IGNITION) SWITCH. (A FAN WILL COME ON IN FRONT OF THE BOILER).

LOOK:



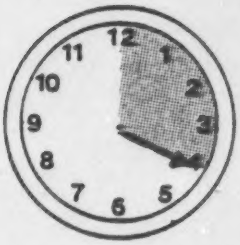
DO: DO JOB STEP 9.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

"TURN THE PAGE"

READ: 10. Wait 20-30 seconds. The boiler should now be fired.

LOOK:

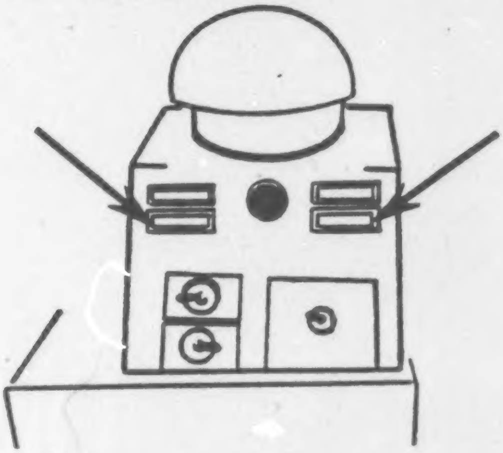


DO: Do job step 10.

CHECK: If "flame failure" light or "low water" light is "on" turn off burner switch, shut main gas valve, and go for expert help. Ask your instructor to help you check for the lights.

READ: 11. If the boiler is fired, watch the boiler for 15 minutes. If the "flame failure" light or the "low water" light do not come "on", the boiler is operating well.

LOOK:



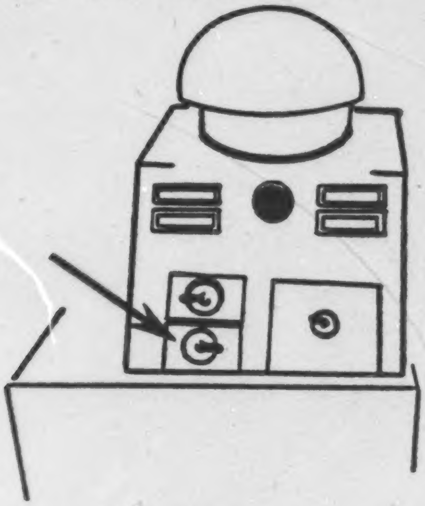
DO: Do job step 11.

CHECK: Check you watch. Stay near the boiler.

"Turn the page"

READ: 12. AFTER 15 MINUTES, TURN THE "LOW FIRE" SWITCH TO "HIGH FIRE" (IF YOUR BOILER HAS THIS SWITCH).

LOOK:

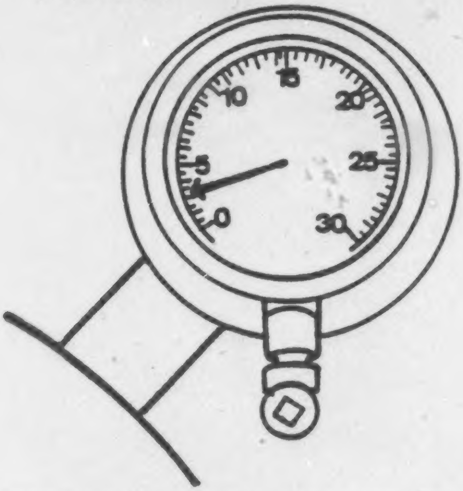


DO: DO JOB STEP 12.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU.

READ: 13. FIND THE STEAM PRESSURE GAUGE. REMEMBER THE READING--MARK THE PICTURE.

LOOK:



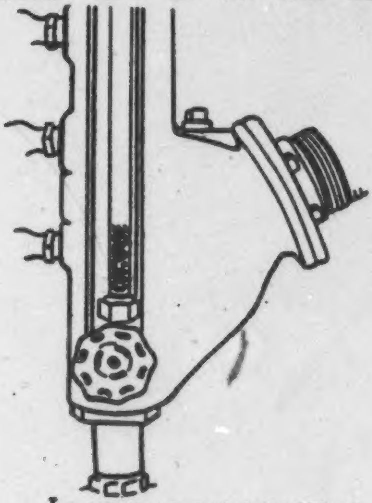
DO: DO JOB STEP 13.

CHECK: THE STEAM PRESSURE GAUGE WILL BE ON THE TOP OR FRONT OF THE BOILER. THE READING SHOULD BE LOW.

"TURN THE PAGE"

READD: 14. LOOK AT THE SIGHT GLASS AGAIN. IT SHOULD BE IN ABOUT THE SAME PLACE--1/3 UP ON THE GLASS.

LOOK:

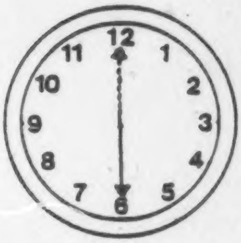


DO: DO JOB STEP 14.

CHECK: LOOK BACK AT JOB STEP 3. IS THE READING THE SAME?

READ: 15. WAIT 30 MINUTES. STAY NEAR THE BOILER. WATCH IT AND LISTEN.

LOOK:



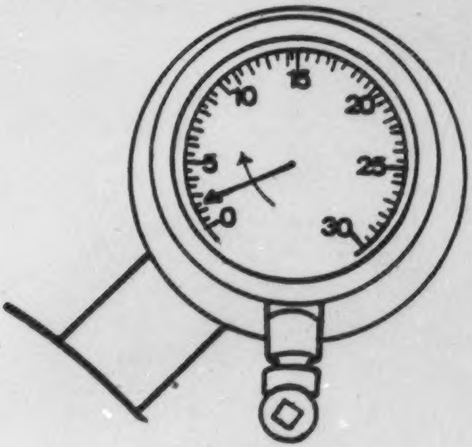
DO: DO JOB STEP 15.

CHECK: IS THE BOILER WORKING WELL?

"TURN THE PAGE"

READ: 16. Look at the steam pressure gauge. It should be moving up. Mark this picture to show the new reading.

LOOK:

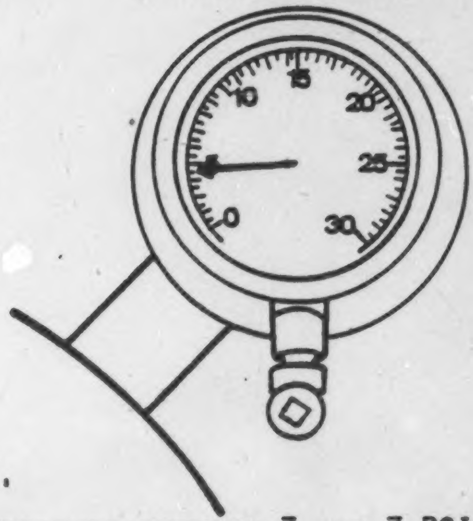


DO: Do job step 16.

CHECK: Look at job step 13. Is the new reading higher?

READ: 17. Wait for the boiler to shut off. The steam pressure gauge should be between 3 and 7 PSI.

LOOK:



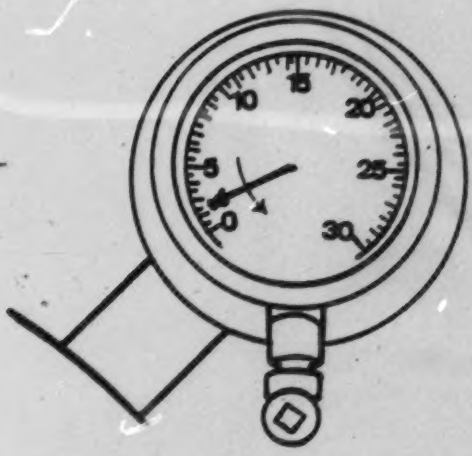
DO: Do job step 17.

CHECK: Is the steam pressure between 3 and 7 PSI? What is the reading? Ask your instructor to check.

"Turn the page"

READ: 18. WAIT FOR THE BOILER TO COME ON AGAIN.

LOOK:



DO: DO JOB STEP 18.

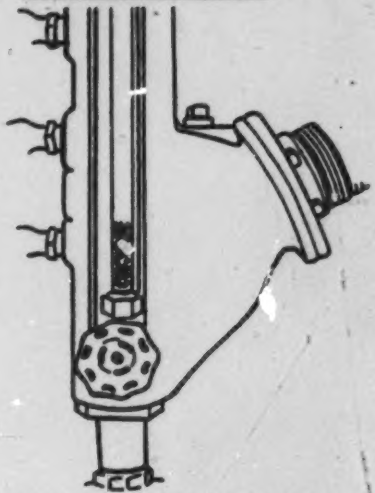
CHECK: THE BOILER WILL COME ON AGAIN WHEN THE STEAM PRESSURE DROPS.

READ: 19. DO JOB STEPS 1-18 TWO MORE TIMES.

DO: DO JOB STEP 19.

READ: 20. IN 3 HOURS, LOOK AT THE WATER LEVEL ON THE SIGHT GLASS AND THE PRESSURE GAUGE.

LOOK:



DO: DO JOB STEP 19.

CHECK: TELL YOUR INSTRUCTOR HOW TO FIRE THE BOILER, AND WHAT YOU MUST DO.

building maintenance & engineering

unit: Steam Boiler Maintenance and Operation

capital area career center

module: 2201 10 002 1 **date:** 5/77 **level:** I

skill title: Determine Water Level in a Steam Boiler

developed & written by: Patrick Kennedy

visuals by: Sandra Starnaman

WORD GUIDE

GLASS SIGHT GAUGE - A WINDOW IN PIPE THAT SHOWS LEVEL OF WATER IN BOILER.

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

HOW TO FIND THE WATER LEVEL OF A STEAM BOILER BY USING A GLASS SIGHT GAUGE.

WHAT YOU WILL NEED:

A STEAM BOILER

WHAT YOU MUST DO:

1. READ THE MODULE.
2. DO THE JOB STEPS.
3. FIND THE WATER LEVEL.

"TURN THE PAGE"

WORD GUIDE

SEALED - NOT OPEN TO THE AIR OUTSIDE.

EVAPORATION - WATER THAT MIXES WITH THE AIR INSIDE THE BOILER AND DISAPPEARS.

RADIATOR - THE HEATERS THAT SUPPLY HEAT TO EACH ROOM.

AUTOMATIC WATER FEED - ADDS WATER TO A BOILER BY ITSELF WHEN THE WATER IS TOO LOW.

INFORMATION

WHY DO WE NEED TO KNOW WHAT THE WATER LEVEL OF A BOILER IS?

TO KEEP IT RUNNING WELL. IF THE WATER IS TOO LOW, THE BOILER WILL STOP. THIS COULD BE AT NIGHT AND THE BUILDING COULD BECOME COLD.

HOW WOULD A BOILER LOSE WATER IF IT IS A SEALED UNIT?

IT IS SEALED, BUT WE CAN LOSE WATER THROUGH EVAPORATION AND LEAKS IN RADIATORS AND PIPES.

IF THE WATER IS LOW, HOW IS MORE WATER PUT BACK INTO THE BOILER?

BY THE AUTOMATIC WATER FEED NEXT TO THE GLASS GAUGE.

NOTE: IT IS BAD TO KEEP ADDING FRESH WATER INTO A BOILER. IF YOU NOTICE THAT YOUR AUTOMATIC WATER FEED IS RUNNING OFTEN, FIND OUT WHERE THE BOILER WATER IS LEAKING.

"TURN THE PAGE"

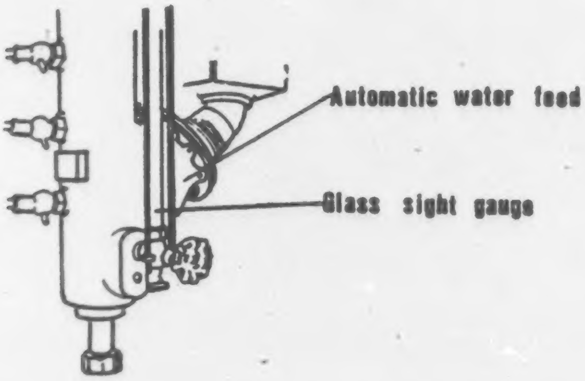
WORD GUIDE

OVERHEATING - GETTING TOO HOT.

JOB STEPS

READ: 1. FIND THE GLASS SIGHT GAUGE AND THE AUTOMATIC WATER FEED ON THE UPPER FRONT OF THE BOILER.

LOOK:

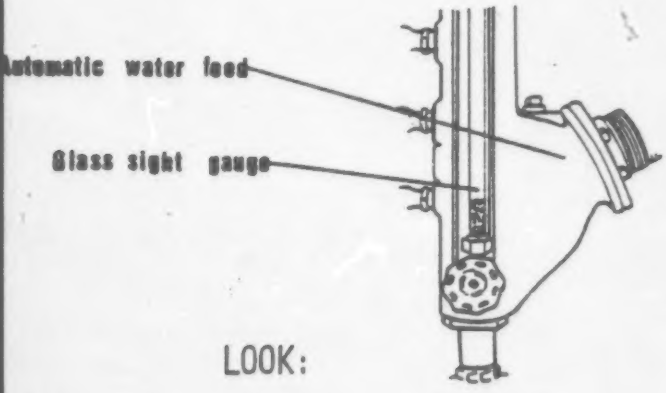

Automatic water feed
Glass sight gauge

DO: DO JOB STEP 1.

READ: 2. LOOK AT THE LINE ON THE AUTOMATIC WATER FEED AND LINE IT UP TO THE GLASS SIGHT GAUGE. THE WATER SHOULD BE UP TO THE LINE. THE WATER LINE MAY DROP 1 INCH WHEN THE BOILER STARTS OR MAY GO UP WHEN THE BOILER IS NOT RUNNING.

NOTE: IF THE AUTOMATIC WATER FEED STOPS WORKING AND THE WATER HAS DROPPED TO A LOW LEVEL, THE BOILER WILL STOP. THIS PREVENTS OVERHEATING.

LOOK:

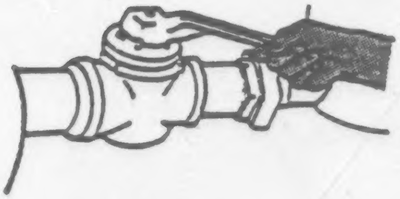

utomatic water feed
Glass sight gauge

DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: 3. IF THE WATER LEVEL IS TOO LOW, AND THE BOILER IS RUNNING, THE BOILER MAY OVERHEAT. TURN OFF THE GAS AND GET EXPERT HELP. REMEMBER THAT THE GAS IS OFF WHEN THE LEVER POINTS AWAY FROM THE PIPE AT A 90° ANGLE.

LOOK:

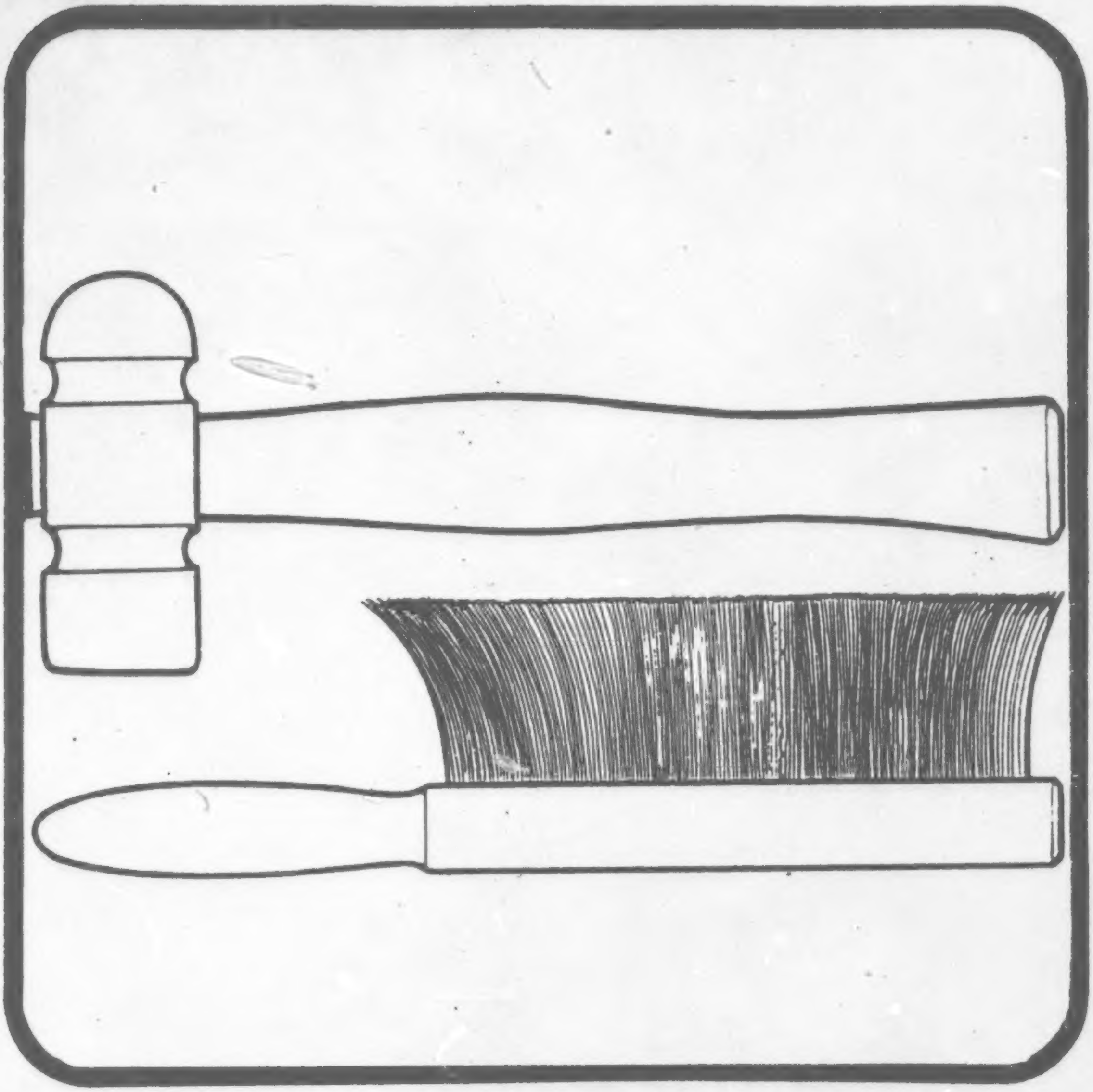


DO: DO JOB STEP 3.

CHECK: GET YOUR INSTRUCTOR AND SHOW HIM/HER THE READING ON THE GAUGE. TELL HIM/HER WHAT IT MEANS. SHOW HIM/HER WHAT YOU WOULD DO IF THE WATER LEVEL WAS TOO LOW AND THE BOILER WAS RUNNING.

READ: 4. YOU MUST CHECK THE WATER LEVEL EVERY DAY.

DO: DO JOB STEP 4.



building maintenance & engineering

unit: STEAM BOILER MAINTENANCE & OPERATION

capital area career center

module: 2201 10 003 1 date: JANUARY 1977 level: I

skill title: BLOW DOWN A STEAM BOILER

developed & written by: JAMES E. SMALLEY

visuals by: SANDRA STARNAMAN 88

WORD GUIDE

BLOW DOWN - TO CLEAN THE WATER

SLUDGE - PIECES OF DIRT IN THE WATER THAT FORMS A MUD

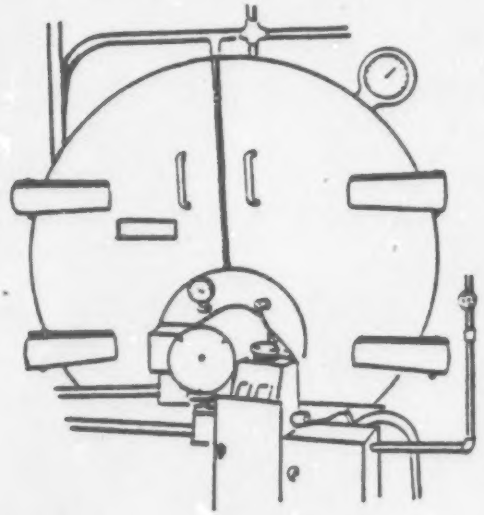
SCALE - SLUDGE THAT HAS BECOME HARD

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

1. HOW TO BLOW DOWN A STEAM BOILER TO TAKE OUT SLUDGE AND SCALE IN THE WATER.
2. HOW TO KNOW THAT THE BOILER IS RUNNING WELL AFTER CLEANING.

WHAT YOU WILL NEED:



A BOILER

A CRAYON

WHAT YOU MUST DO:

1. READ THE MODULE.
2. GO TO THE BOILER.
3. DRAIN THE BOILER.
4. SEE THAT THE BOTTOM OF BOILER IS FREE SLUDGE AND SCALE.
5. CHECK THE BOILER WATER AFTER CLEANING TO SEE IF IT IS AT THE RIGHT LEVEL.

"TURN THE PAGE"

INFORMATION

Boilers get dirty, like anything else. Pieces of dirt that are in the water fall to the bottom of the boiler. This dirt becomes like mud and is called sludge. If it isn't cleaned out, it becomes hard and becomes scale.

If the dirt hardens, the boiler will take longer to heat up. Because it takes more heat, it costs extra money. Fuel is also wasted. This is why we clean or blow down boilers.

"TURN THE PAGE"

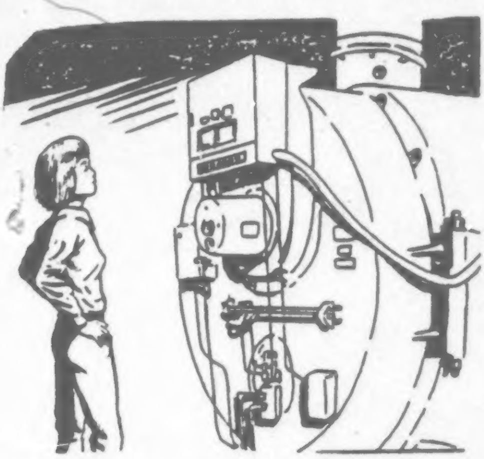
READ: **CAUTION:** The job you are going to do is dangerous because of hot water. Be careful.

READ: 1. Go to your instructor. He/she will tell you where to go.

DO: Do job step 1.

READ: 2. Walk around the boiler and get to know it. Look at all the parts.

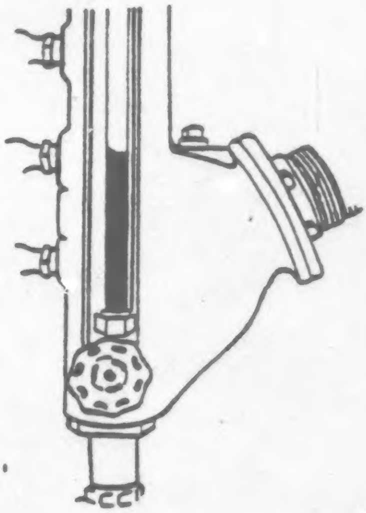
LOOK:



DO: Do job step 2.

READ: 3. Look at the upper part of the boiler. Look for a sight glass like you see below.

LOOK:

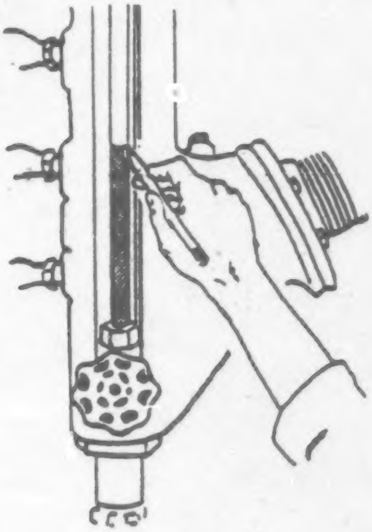


DO: Do job step 3.

"TURN THE PAGE"

READ: 4. LOOK AT THE WATER LEVEL.
TAKE A PENCIL OR CRAYON AND MARK
THE GLASS WHERE THE WATER LEVEL
IS AT.

LOOK:

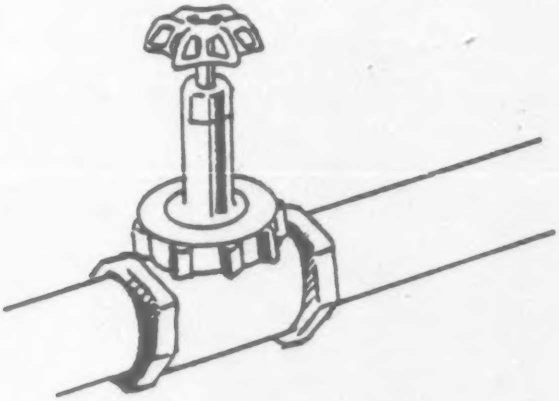


DO: DO JOB STEP 4.

CHECK: ASK YOUR INSTRUCTOR TO CHECK WHAT YOU HAVE DONE SO FAR.

READ: 5. LOOK AT THE LOWER PART OF
THE BOILER; FRONT, REAR OR SIDES.
YOU WILL SEE A VALVE LIKE IN THE
PICTURE BELOW. THIS IS THE BLOW
DOWN VALVE.

LOOK:

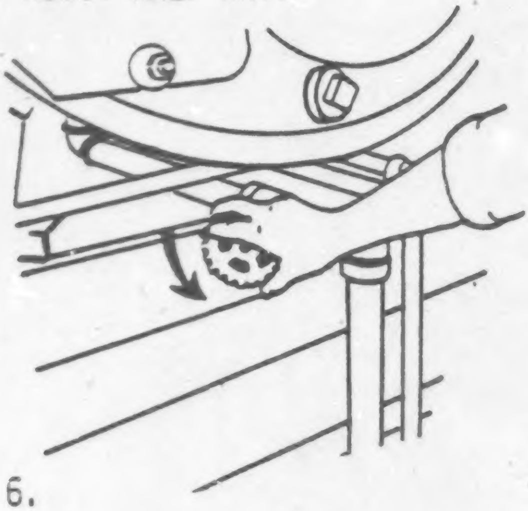


DO: DO JOB STEP 5.

"TURN THE PAGE"

READ: 6. TURN THE ROUND HANDLE ON THE VALVE TO YOUR LEFT. THIS OPENS IT. TURN IT ABOUT HALF WAY.

LOOK:

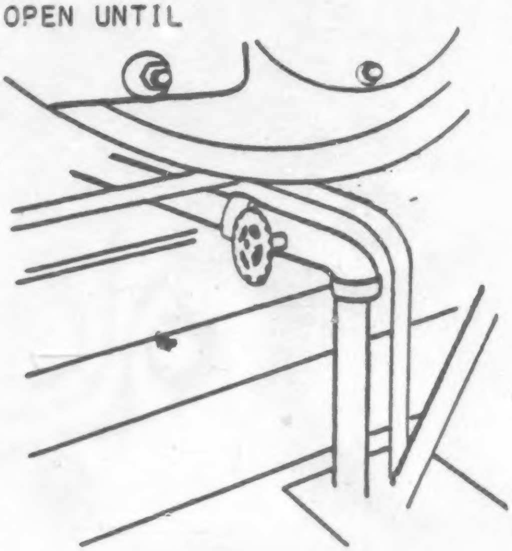


DO: DO JOB STEP 6.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU DO THIS.

READ: 7. LEAVE THE VALVE OPEN UNTIL THE WATER CLEARS UP.

LOOK:



DO: DO JOB STEP 7.

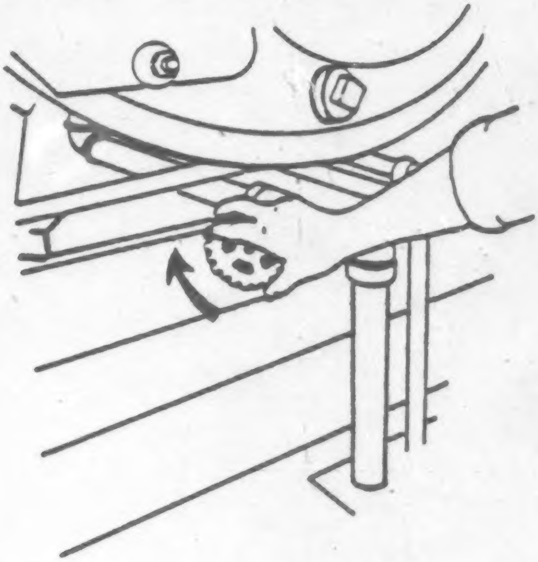
NOTE: THIS WILL TAKE ONLY A FEW MINUTES. DO NOT GET WORRIED IF THE WATER IS YELLOW OR GREEN. THIS IS BECAUSE OF MATERIAL PUT IN TO KEEP DOWN SLUDGE.

CHECK: ASK YOUR INSTRUCTOR TO SEE THAT THE WATER COLOR IS RIGHT AFTER DRAINING.

"TURN THE PAGE"

READ: 8. To close, turn the valve to the right.

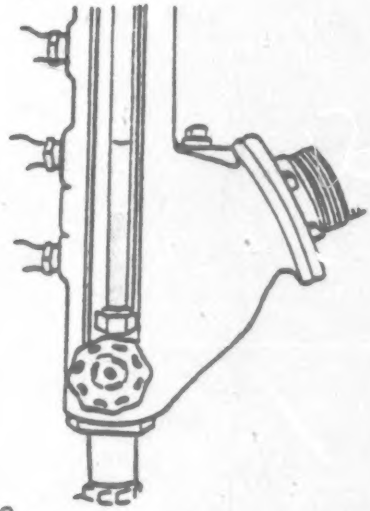
LOOK:



DO: Do job step 8.

READ: 9. Look at the sight glass. The water level has gone below the mark you made.

LOOK:

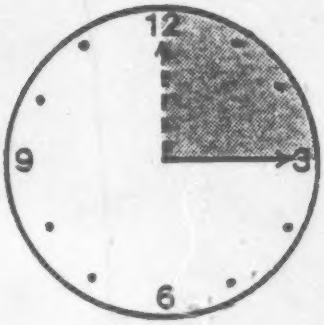


DO: Do job step 9.

"TURN THE PAGE"

READ: 10. CHECK THE CLOCK. WAIT 15 MINUTES.

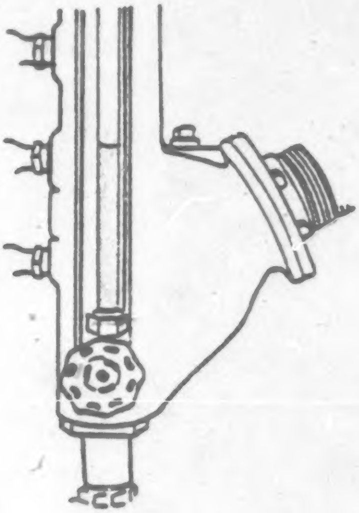
LOOK:



DO: DO JOB STEP 10.

READ: 11. LOOK AT THE SIGHT GLASS. THE WATER SHOULD NOW BE UP TO WHERE YOU MARKED IT.

LOOK:



DO: DO JOB STEP 11.

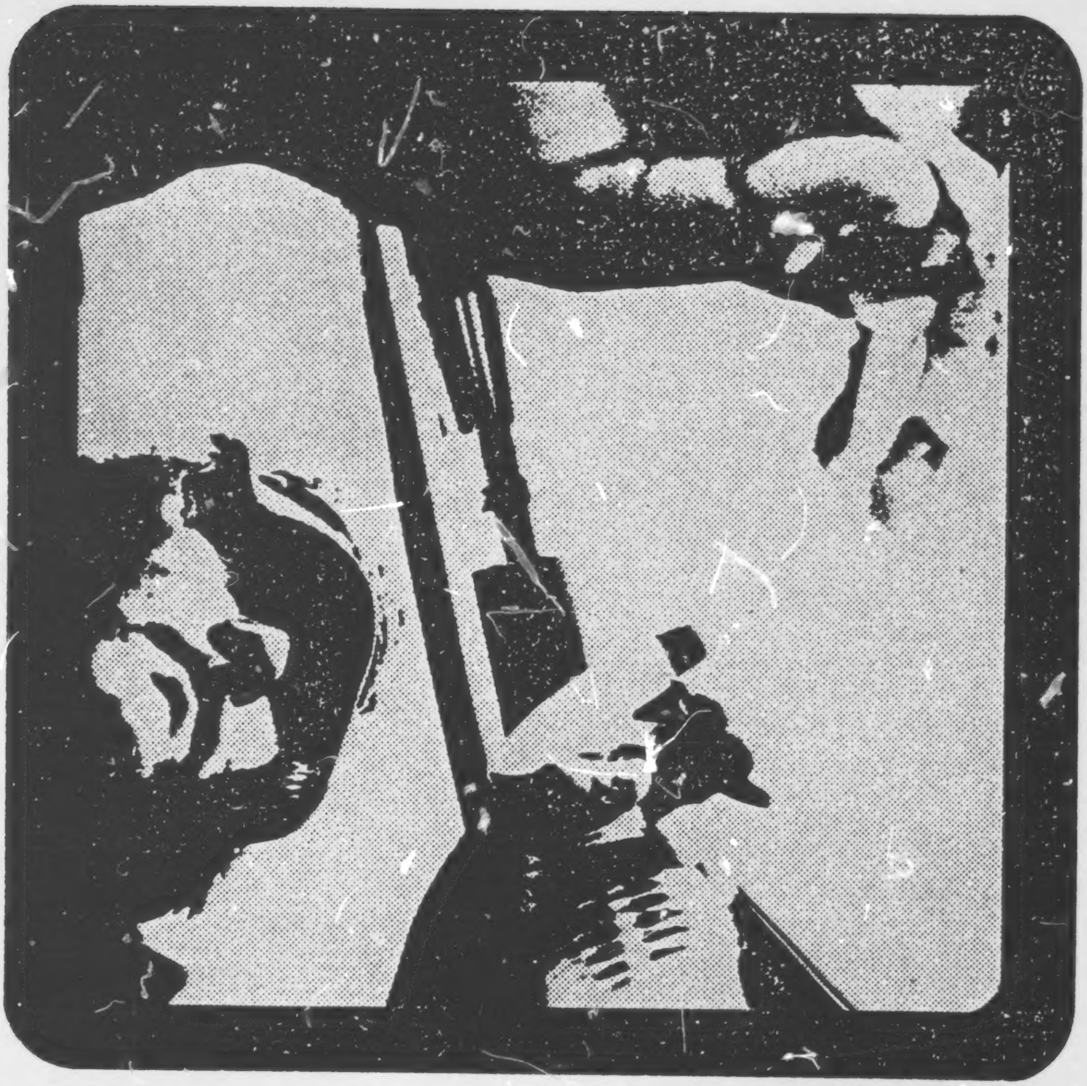
CHECK: ASK YOUR INSTRUCTOR TO CHECK THAT THE WATER LEVEL IS CORRECT. IF IT ISN'T, THE BOILER COULD OVERHEAT AND BLOW UP.

"TURN THE PAGE"

READ: 12. MAKE SURE THE BOILER IS WORKING AND RUNNING.

DO: Do JOB STEP 12

CHECK: ASK YOUR INSTRUCTOR TO SEE IF THE BOILER IS WORKING RIGHT.



building maintenance & engineering

unit: Power Tools

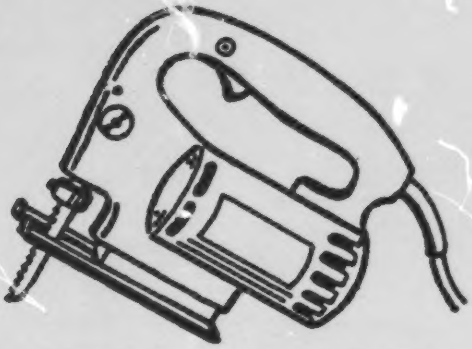
capital area career center

module: 2201 20 001 1 date: February 1977 level:

skill title: Operation of Sabre Saw

developed & written by: Mike Polen

visuals by: Bill Draper



WORD GUIDE

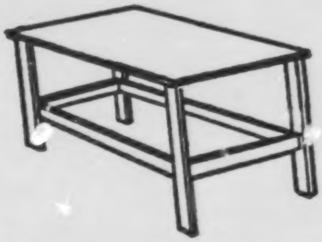
TRI-SQUARE - Used to measure and make angles.

PERFORMANCE OBJECTIVE

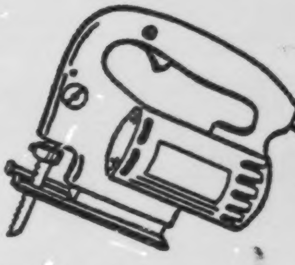
What You Will Learn:

How to use a sabre saw.

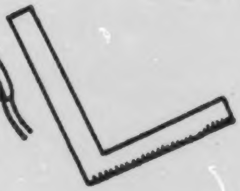
What You Will Need:



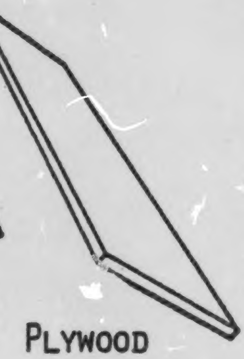
Table



Sabre Saw



Tri-square



Plywood

Safety glasses

What You Must Do:

1. Read the job steps.
2. Do the tasks.
3. Follow safety rules.
4. Cut the plywood along the curved line.
5. Cut the plywood along the straight lines.

"Turn the page"

JOB STEPS

READ: CAUTION!

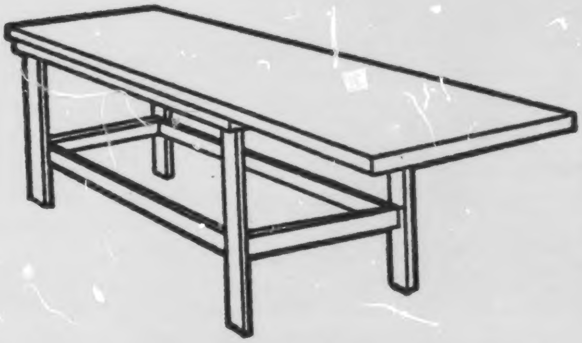
A. ASK YOUR INSTRUCTOR TO WATCH AS YOU DO THIS MODULE.

B. NEVER REMOVE THE SAW FROM A CUT UNTIL THE BLADE HAS STOPPED.

C. ALWAYS UNPLUG THE SAW WHEN MAKING CHANGES ON THE SAW.

READ: 1. PLACE THE PLYWOOD OVER THE EDGE OF THE BENCH SO THAT THE SAW WILL NOT CUT INTO THE TABLE.

LOOK:

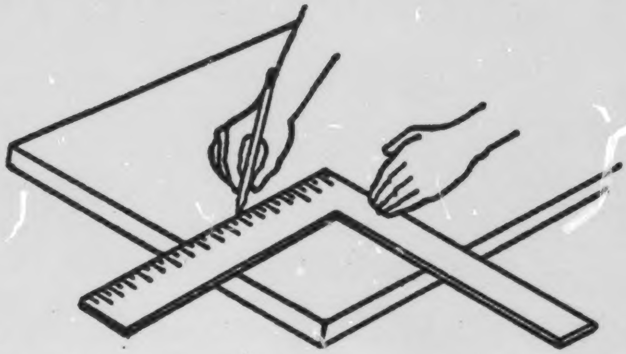


DO: DO JOB STEP 1.

"TURN THE PAGE"

READ: 2. With a pencil and the Tri-square, draw a square corner on the plywood.

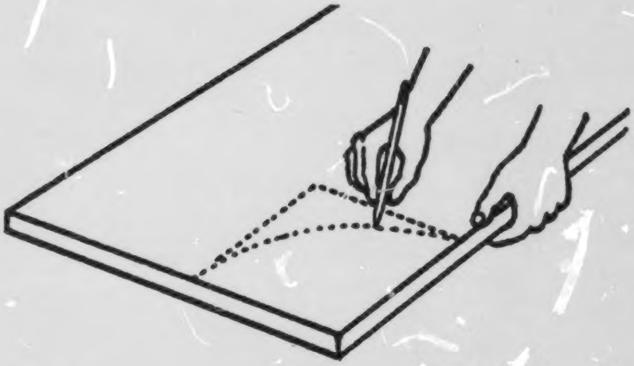
LOOK:



DO: Do job step 2.

READ: 3. Draw a curved line between the ends of the square corner you have drawn.

LOOK:



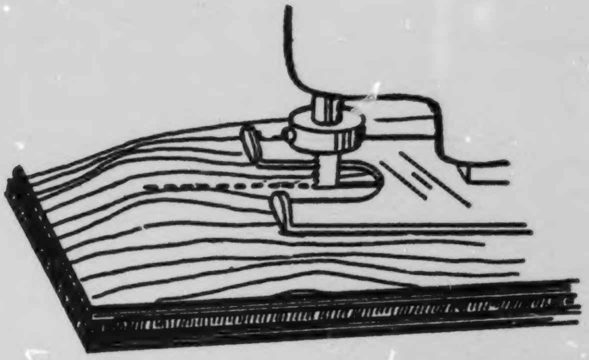
DO: Do job step 3.

CHECK: Ask your instructor to check your work.

"Turn the page"

READ: 4. PLACE FRONT OF THE SAW-STAND ON THE PLYWOOD. YOU SHOULD SEE THE PENCIL LINE THROUGH THE VIEWING GAP. WEAR SAFETY GLASSES.

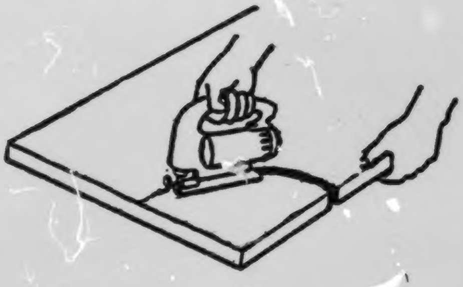
LOOK:



DO: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 4.

READ: 5. PULL SWITCH TO START SAW AND MOVE SAW SLOWLY FORWARD. KEEP THE PENCIL LINE ON THE EDGE OF THE VIEWING GAP.

LOOK:



DO: IF YOUR INSTRUCTOR IS WITH YOU, YOU MAY DO JOB STEP 5.

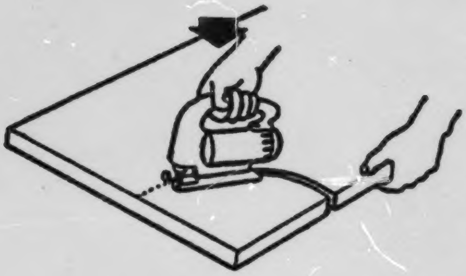
"TURN THE PAGE"

WORD GUIDE

DOWN PRESSURE - PRESS DOWN ON SAW A LITTLE.

READ: 6. BE SURE TO KEEP DOWN PRESSURE ON THE SAW AS YOU MOVE FORWARD.

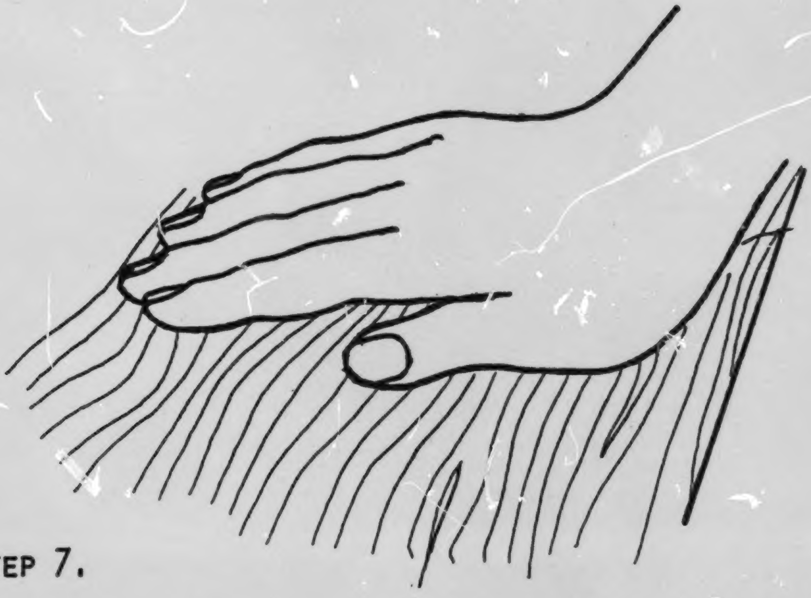
LOOK:



DO: DO JOB STEP 6.

READ: 7. KEEP ONE HAND OR A HEAVY WEIGHT ON THE PLYWOOD TO KEEP IT STEADY.

LOOK:

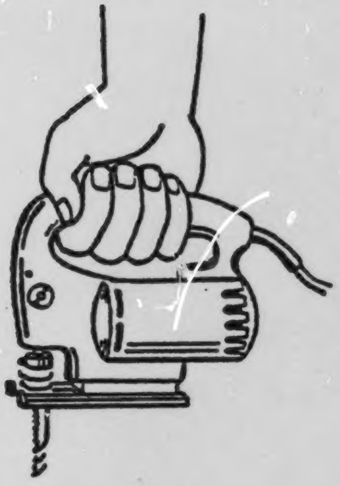


DO: DO JOB STEP 7.

"TURN THE PAGE"

READ: 8. WHEN THE CUTTING IS DONE, WAIT UNTIL THE SAW STOPS BEFORE SETTING DOWN.

LOOK:

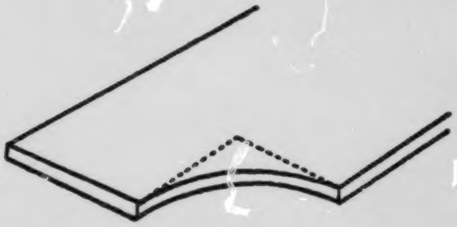


DO: DO JOB STEP 8 BY MAKING SURE THE BLADE HAS STOPPED.

CHECK: YOUR INSTRUCTOR WILL CHECK YOUR CURVED CUT.

READ: 9. TO CUT THE STRAIGHT ANGLE, START AT THE SAME PLACE YOU DID TO CUT THE CURVED LINE.

LOOK:

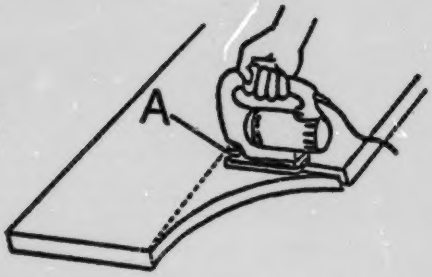


DO: IF YOUR INSTRUCTOR IS WITH YOU, DO JOB STEP 9.

"TURN THE PAGE"

READ: 10. CUT ALONG THE STRAIGHT PENCIL LINE UNTIL YOU COME TO POINT A.

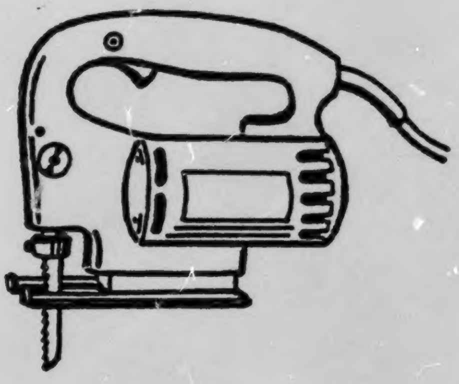
LOOK:



DO: IF YOUR INSTRUCTOR IS WITH YOU, KEEP SAWING UNTIL YOU REACH POINT A.

READ: 11. STOP THE SAW.

LOOK:

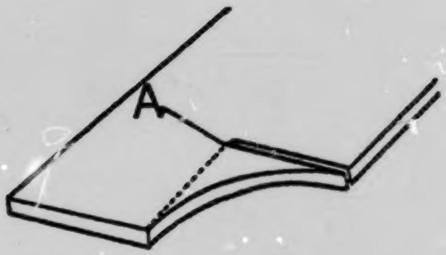


DO: DO JOB STEP 11 AND BE SURE BLADE STOPS BEFORE DOING NEXT STEP.

"TURN THE PAGE"

READ: 12. PULL OUT THE SAW AND CUT ALONG SECOND PENCIL LINE UNTIL YOU COME TO POINT A.

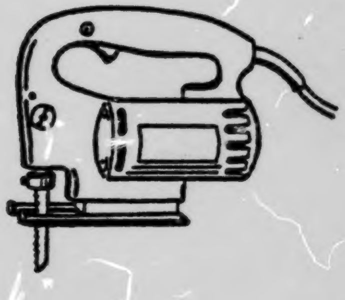
LOOK:



DO: IF YOUR INSTRUCTOR IS WITH YOU, DO JOB STEP 12.

READ: 13. STOP THE SAW.

LOOK:

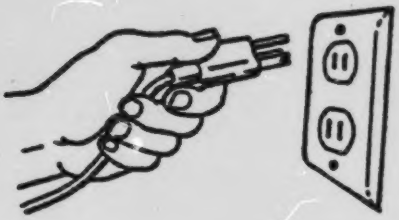


DO: DO JOB STEP 13 AND BE SURE BLADE STOPS.

"TURN THE PAGE"

READ: 14. PUT DOWN THE SAW AND UNPLUG IT.

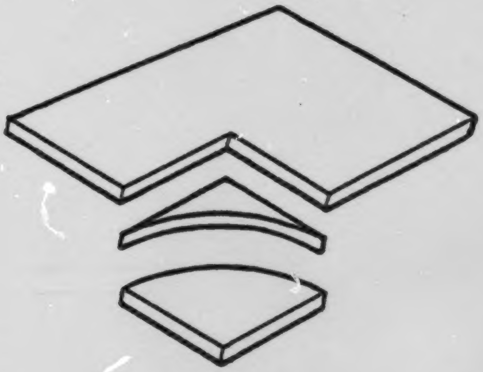
LOOK:



DO: DO JOB STEP 14.

READ: 15. CHECK THE PIECES YOU HAVE CUT.

LOOK:

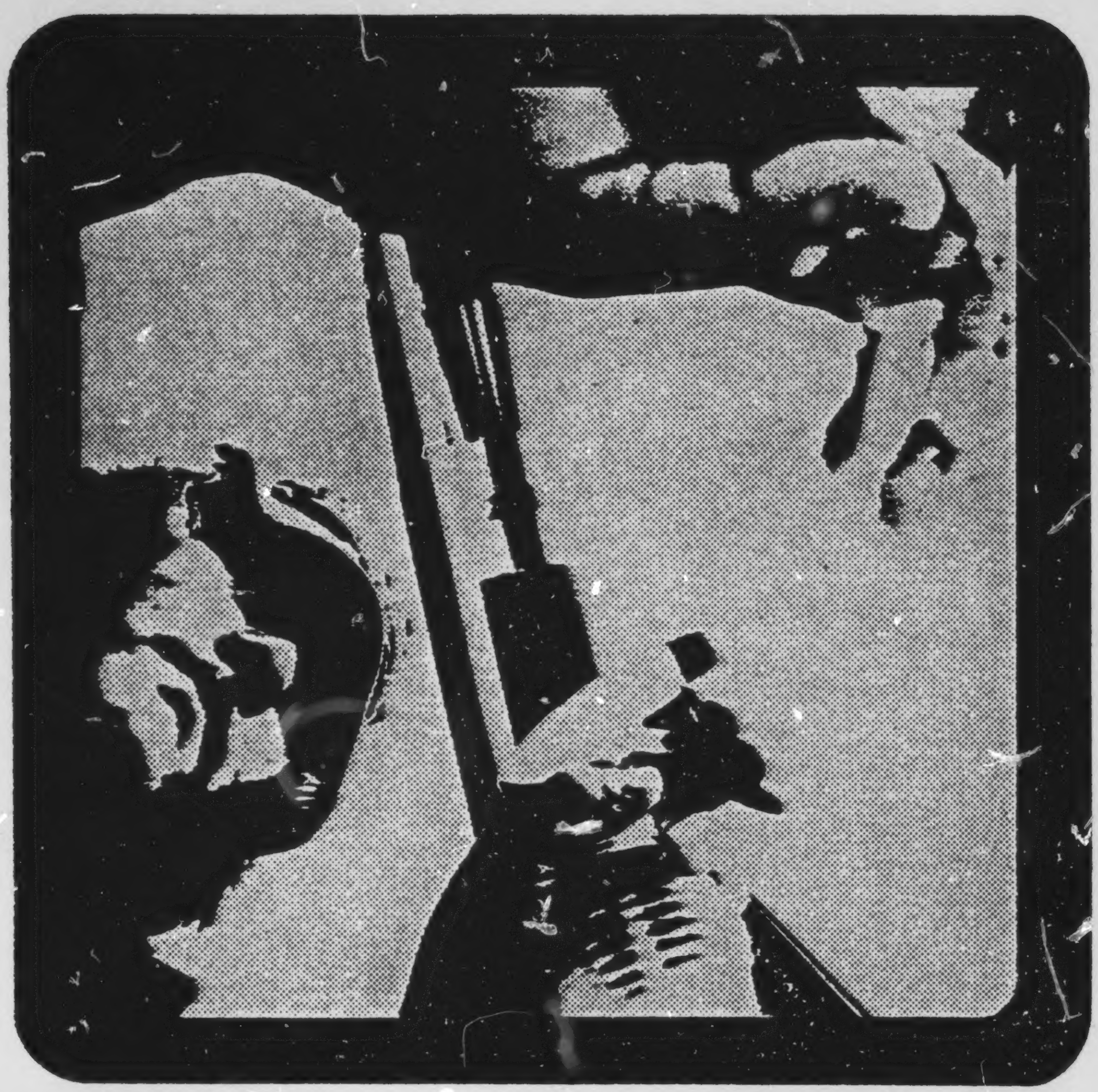


DO: DO JOB STEP 15.

CHECK: THE PIECES OF WOOD SHOULD LOOK LIKE THE PICTURE ABOVE.
SHOW THE PIECES TO YOUR INSTRUCTOR.

READ: 16. CLEAN UP WORK AREA.

DO: DO JOB STEP 16.



building maintenance & engineering

unit: Power Tools

capital area career center

module: 2201 20 002 1 date: 2/77 level: II

skill title: Operation Of Drill Press

developed & written by: Mike Polen

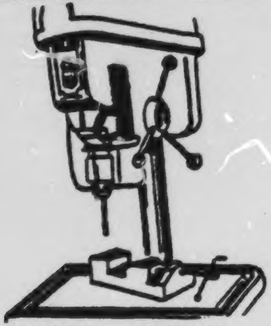
visuals by: Chuck Knock and Marie Gougeon

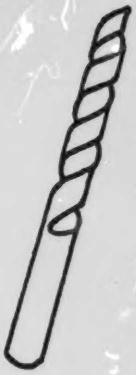
PERFORMANCE OBJECTIVE

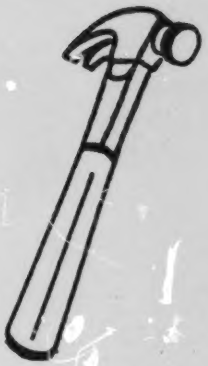
What You Will Learn:

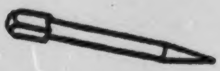
How to use a drill press.

What You Will Need:


DRILL PRESS

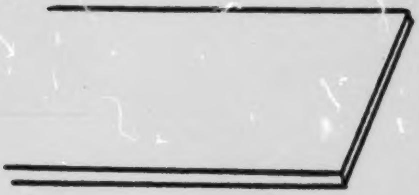

DRILL BIT

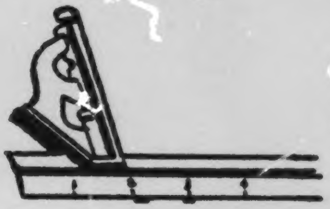

HAMMER


PRICK PUNCH

PENCIL

SAFETY GLASSES


PIECE OF WOOD


TRI-SQUARE

What You Must Do:

1. Read the job steps.
2. Do the tasks safely.
3. Drill a straight hole in the correct place.

"Turn the page"

WORD GUIDE

DRILL BITS - The part of a drill that cuts the hole.

CHUCK-WRENCH - Used to loosen and tighten the drill chuck.

MATERIAL - Wood or fiber board.

JOB STEPS

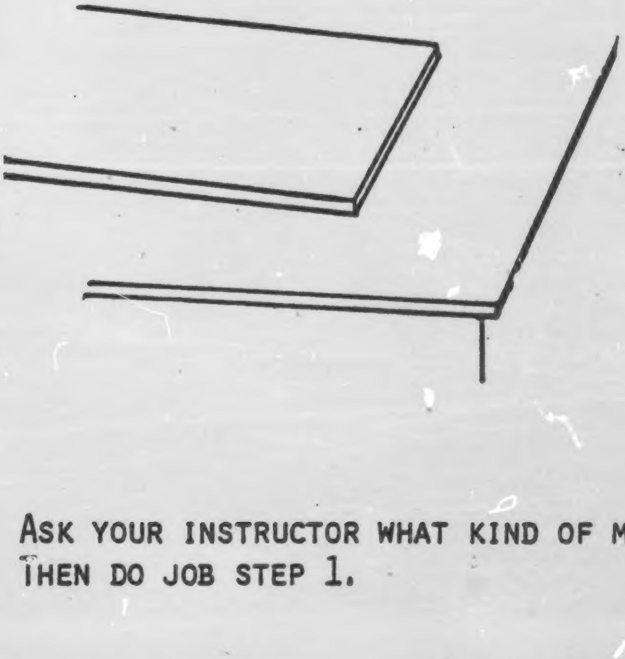
READ:

CAUTION:

1. Unplug the drill motor when changing the drill bits.
2. NEVER leave the chuck wrench in the drill when you are done tightening the chuck.

READ: 1. Put a piece of material on the table.

LOOK:

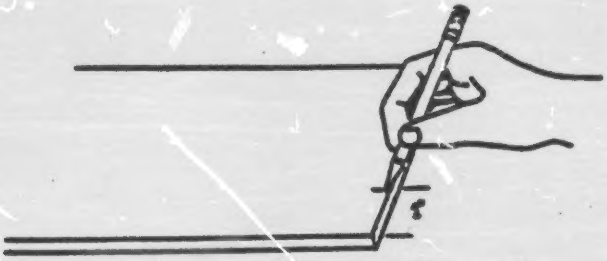


DO: Ask your instructor what kind of material to use. Then do job step 1.

"Turn the page"

READ: 2. Measure up 1 inch from the bottom right corner and make a pencil mark on the edge.

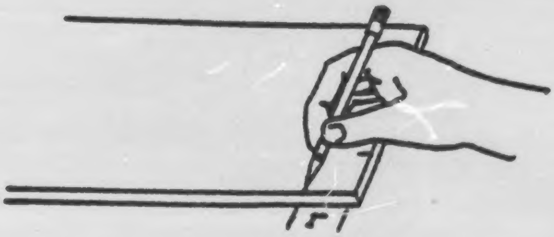
LOOK:



DO: Do job step 2.

READ: 3. Now measure 1 inch to the left of the bottom right corner and make a pencil mark.

LOOK:



DO: Do job step 3.

CHECK: Ask your instructor to check your work.

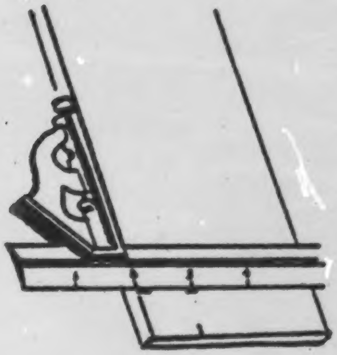
"Turn the page"

WORD GUIDE

TRI-SQUARE - USED TO MEASURE AND MAKE ANGLES.

READ: 4. PUT A TRI-SQUARE AT THE FIRST MARK YOU MADE. MEASURE 1 INCH ONTO THE MATERIAL AND MAKE A PENCIL MARK.

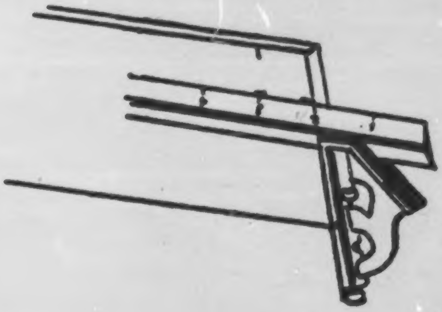
LOOK:



DO: DO JOB STEP 4

READ: 5. PUT THE TRI-SQUARE EVEN WITH THE SECOND MARK YOU MADE. MEASURE 1 INCH INTO THE MATERIAL AND MARK IT.

LOOK:



DO: DO JOB STEP 5.

CHECK: THE PENCIL MARKS FOR JOB STEP 4 AND JOB STEP 5 SHOULD TOUCH. IF THEY DO NOT TOUCH, ASK YOUR INSTRUCTOR FOR HELP.

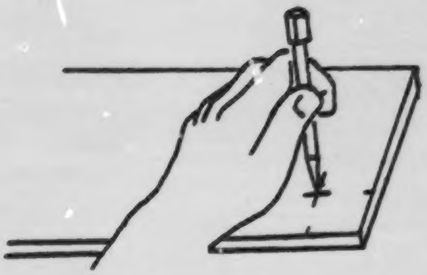
"TURN THE PAGE"

WORD GUIDE

PRICK PUNCH - A METAL TOOL WITH A POINTED EDGE.

READ: 6. PUT THE POINT OF A PRICK PUNCH AT THE PLACE WHERE THE PENCIL MARKS TOUCH.

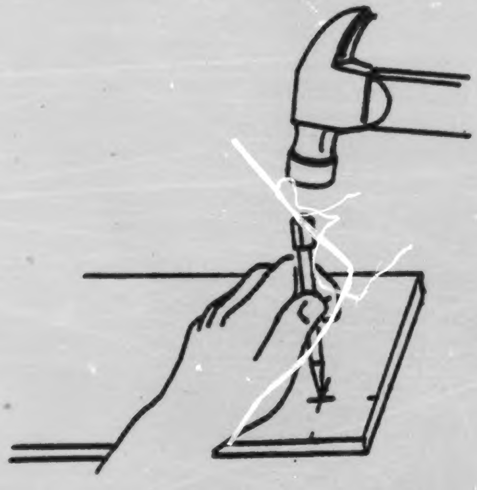
LOOK:



DO: DO JOB STEP 6. REMEMBER, IF THE MARKS DID NOT TOUCH, ASK YOUR INSTRUCTOR FOR HELP.

READ: 7. TAP THE PRICK PUNCH WITH A HAMMER TO MAKE A SMALL STARTER HOLE.

LOOK:



DO: DO JOB STEP 7.

CHECK: SHOW YOUR INSTRUCTOR WHAT YOU HAVE DONE.

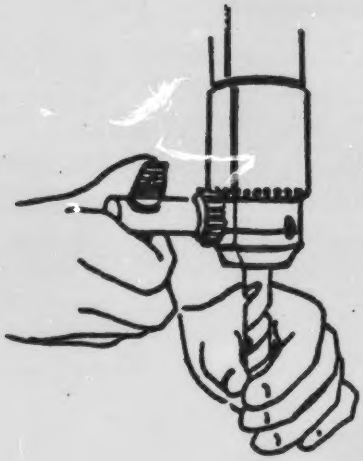
"TURN THE PAGE"

READ: 8. BE SURE THE DRILL IS UNPLUGGED.

DO: IF THE DRILL IS PLUGGED IN, PULL OUT THE ELECTRICAL PLUG.

READ: 9. PUT A 1/4 INCH DRILL IN THE CHUCK. USE THE CHUCK-WRENCH TO TIGHTEN THE CHUCK.

LOOK:



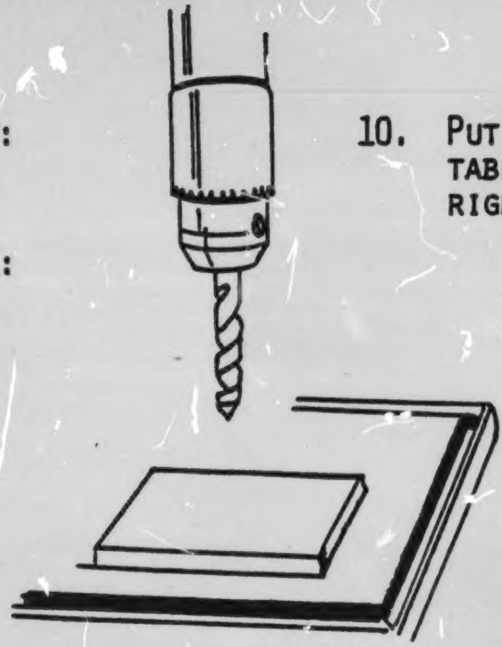
DO: DO JOB STEP 9.

CHECK: BE SURE THE CHUCK IS TIGHT. BE SURE YOU HAVE PUT THE CHUCK WRENCH IN THE TRAY.

"TURN THE PAGE"

READ: 10. Put a piece of wood on the drill table. Be sure the wood is right under the drill bit.

LOOK:

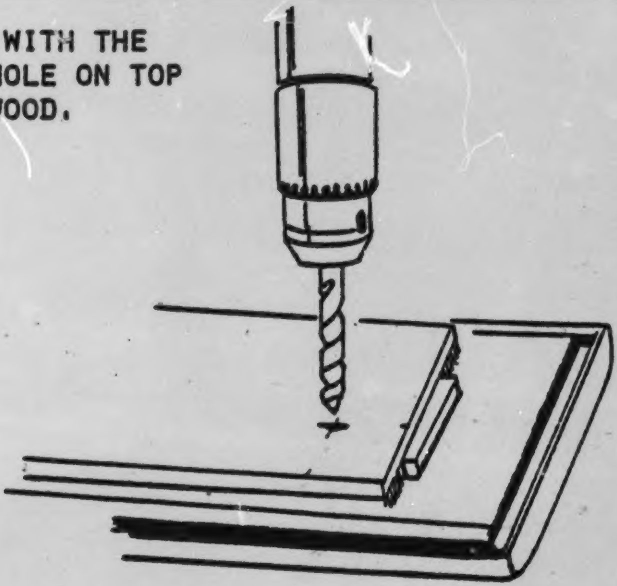


DO: Do job step 10.

CHECK: The piece of wood must be at least half as big as the piece of material you are drilling.

READ: 11. Put the material with the punched starter hole on top of the piece of wood.

LOOK:



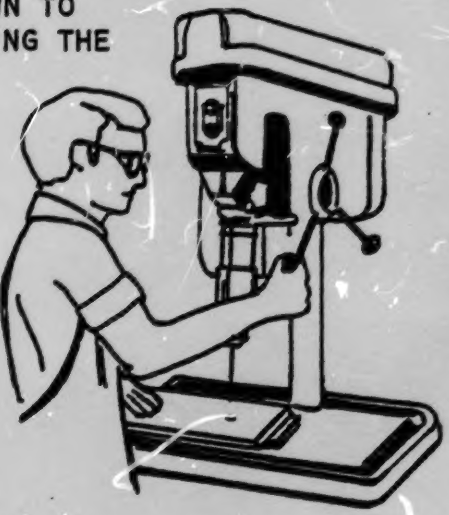
DO: Do job step 11.

CHECK: Be sure the material sits level and does not tip off the piece of wood.

"Turn the page"

READ: 12. MOVE THE DRILL BIT DOWN TO THE MATERIAL BY LOWERING THE CONTROL LEVER.

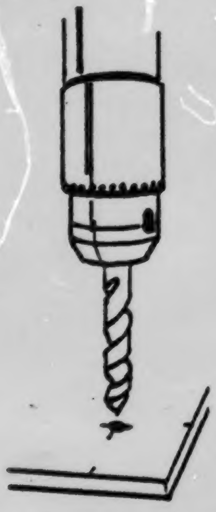
LOOK:



DO: DO JOB STEP 12.

READ: 13. LINE UP THE DRILL BIT WITH THE PUNCHED STARTER HOLE.

LOOK:

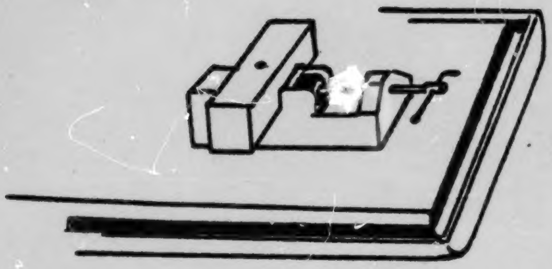


DO: DO JOB STEP 13.

"TURN THE PAGE"

READ: 14. PUT A CLAMP ON THE MATERIAL AND WOOD TO HOLD IT TIGHT. WEAR SAFETY GLASSES.

LOOK:



DO: DO JOB STEP 14, THEN SLOWLY LET THE CONTROL LEVER UP.

CHECK: DO NOT MOVE THE MATERIAL. BE SURE THE DRILL BIT IS STILL LINED UP WITH THE STARTER HOLE.

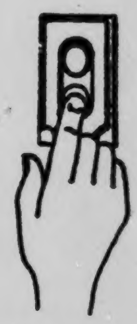
ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 15. PLUG IN THE DRILL.

DO: DO JOB STEP 15 IF YOUR INSTRUCTOR HAS CHECKED YOUR WORK.

READ: 16. PRESS THE STARTER BUTTON.

LOOK:

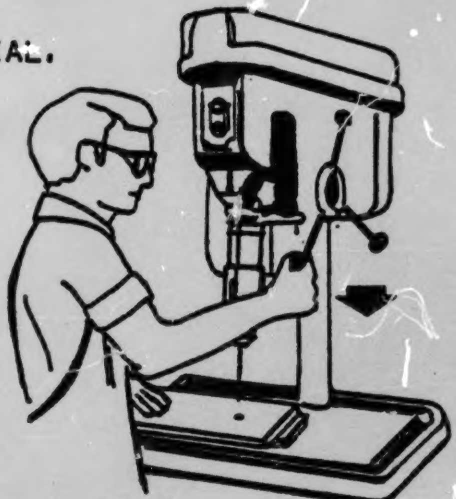


DO: DO JOB STEP 16.

"TURN THE PAGE"

READ: 17. SLOWLY LOWER THE CONTROL LEVER UNTIL THE DRILL BIT BEGINS TO DRILL THE MATERIAL.

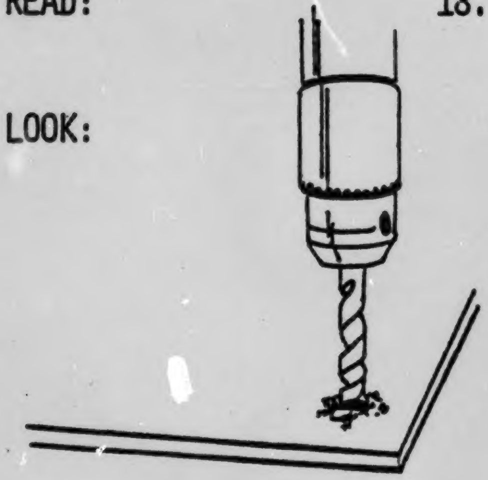
LOOK:



DO: DO JOB STEP 17.

READ: 18. SLOWLY DRILL THROUGH THE MATERIAL UNTIL YOU BEGIN TO DRILL THE WOOD PIECE.

LOOK:

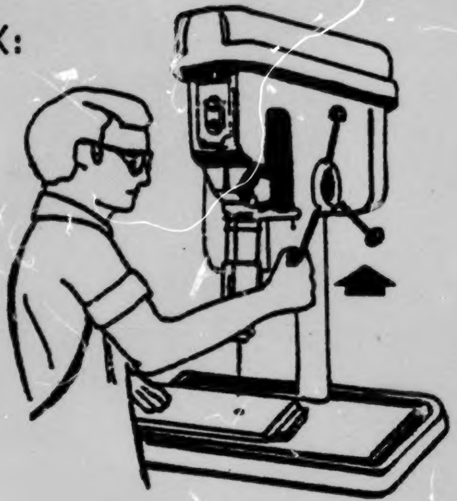


DO: DO JOB STEP 18.

"TURN THE PAGE"

READ: 19. SLOWLY LET THE CONTROL LEVER UP.

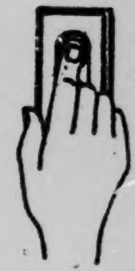
LOOK:



DO: Do JOB STEP 19.

READ: 20. PUSH THE BUTTON.

LOOK:



DO: Do JOB STEP 20.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 21. CLEAN UP WORK AREA.

DO: Do JOB STEP 21.

building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 003 1 date: 2/77 level: II

skill title: OPERATION OF POWER SANDER

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK AND MARIE GOUGEON

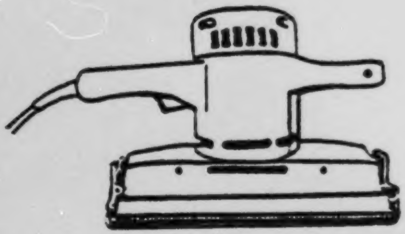
PERFORMANCE OBJECTIVE

What You Will Learn:

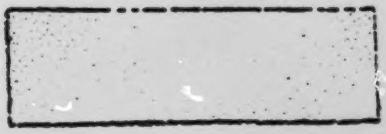
How to use a power sander.

What You Will Need:

SAFETY GLASSES



POWER SANDER



SANDPAPER

WOOD TO SAND

What You Must Do:

1. Read the job steps.
2. Do the tasks.
3. Sand the wood until it is smooth to touch.
4. Dust off the wood.

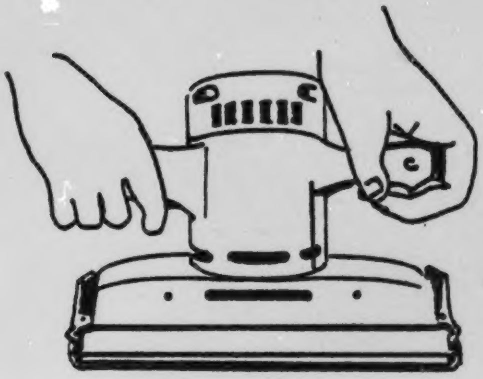
"TURN THE PAGE"

JOB STEPS

READ:

CAUTION: Keep a tight hold on the sander so it will not tilt. If it tilts, the sander will make digs in the wood.

LOOK:



READ:

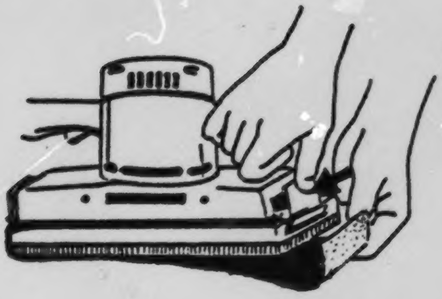
CAUTION: Always unplug the sander before putting on sandpaper.

"Turn The Page"

JOB STEPS

READAD: 1. WITH THE SANDER UNPLUGGED, LIFT THE SPRING CLIPS.

LOOK:



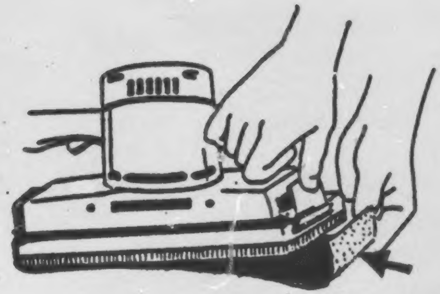
DO: DO JOB STEP 1.

"TURN THE PAGE"

JOB STEPS

READ: 2. SLIDE AT LEAST 1/2 INCH OF SANDPAPER UNDER THE HOLDING EDGE.

LOOK:



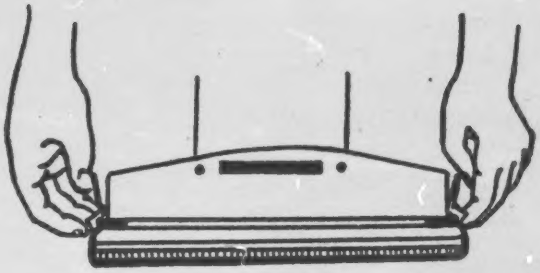
DO: Do JOB STEP 2.

"TURN THE PAGE"

JOB STEPS

READ: 3. PUSH THE SPRING CLIPS DOWN.

LOOK:



DO; DO JOB STEP 3. BE SURE SANDPAPER DOES NOT DROOP DOWN.

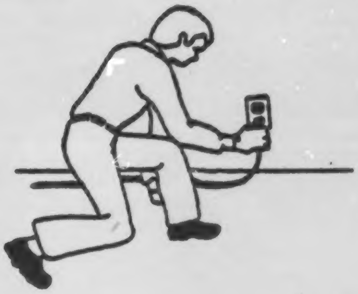
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 4. PLUG IN THE SANDER CORD.

LOOK:



DO: DO JOB STEP 4.

"TURN THE PAGE"

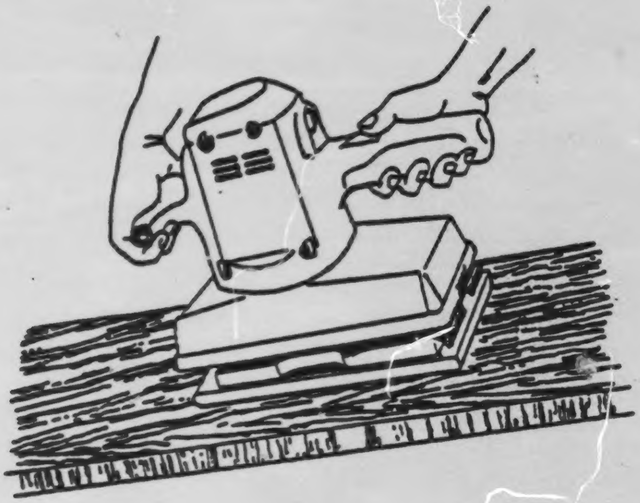
WORD GUIDE

WOOD GRAIN - THE LINES IN THE WOOD.

JOB STEPS

READ: 5. PLACE SANDER ON THE WOOD SO IT WILL SAND ALONG WITH THE WOOD GRAIN.

LOOK:



DO: DO JOB STEP 5.

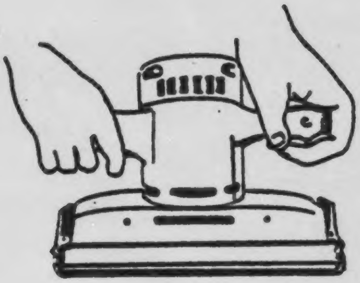
CHECK: ASK YOUR INSTRUCTOR TO CHECK THE WAY YOU ARE HOLDING THE SANDER.

"TURN THE PAGE"

JOB STEPS

READ: 6. HOLD THE SANDER WITH BOTH HANDS. PUSH DOWN A LITTLE.

LOOK:



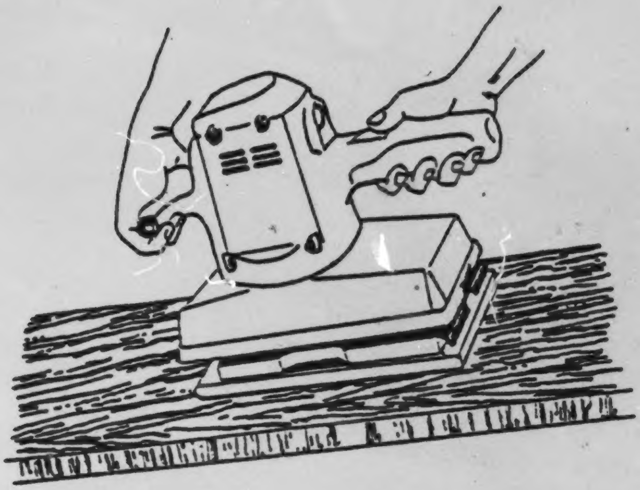
DO: DO JOB STEP 6.

"TURN THE PAGE"

JOB STEPS

READ: 7. TURN ON THE SWITCH AND MOVE THE SANDER SLOWLY BACK AND FORTH. FOLLOW THE GRAIN. WEAR SAFETY GLASSES.

LOOK:



DO: DO JOB STEP 7.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 7.

"TURN THE PAGE"

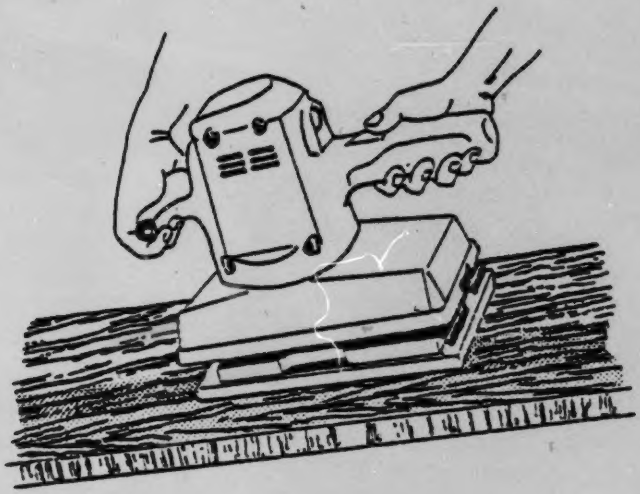
WORD GUIDE

OVERLAPPING - ONE EDGE OF A THING LYING OVER ONE EDGE OF ANOTHER. HERE IT MEANS HOLDING THE SANDER SO THAT AS YOU SAND A ROW, THE EDGE OF THE SANDER IS SLIGHTLY OVER THE EDGE OF THE ROW SANDED BEFORE.

JOB STEPS

READ: 8. MOVE TO THE LEFT OR RIGHT BY OVERLAPPING EACH STROKE.

LOOK:



DO: DO JOB STEP 8.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 8.

"TURN THE PAGE"

JOB STEPS

READ: 9. Do job step 8 again until the wood is sanded smooth.

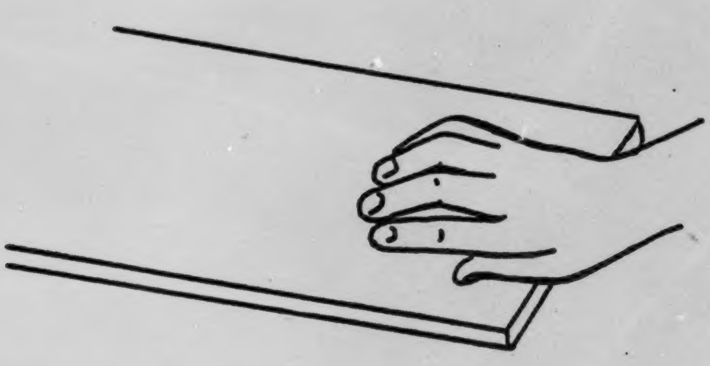
DO: Do job step 9.

READ: 10. Brush off the dust.

DO: Do job step 10.

READ: 11. Feel the surface of the wood with your fingers. You will be able to feel any rough spots.

LOOK:



DO: Do job step 11.

CHECK: Ask your instructor to check the wood with you.

"Turn The Page"

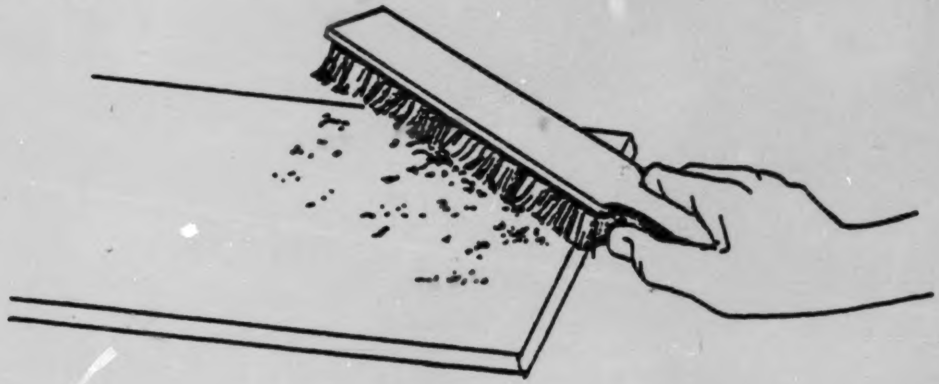
JOB STEPS

READ: 12. KEEP SANDING UNTIL THE WOOD IS SMOOTH.

DO: DO JOB STEP 12 IF YOUR INSTRUCTOR ASKS YOU TO.

READ: 13. WHEN WOOD IS SMOOTH, DUST IT OFF.

LOOK:



DO: DO JOB STEP 13.

CHECK: SHOW THE WOOD TO YOUR INSTRUCTOR.

READ: 14. CLEAN UP WORK AREA.

DO: DO JOB STEP 14.

"TURN THE PAGE"

building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 004 1 **date:** 2/77 **level:** II

skill title: OPERATION OF TABLE SAW

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK

WORD GUIDE

CUT - CUT ACROSS THE WOOD GRAIN USING THE ANGLE GUIDE.

RIP - SAW WITH THE WOOD GRAIN USING THE RIP FENCE.

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

HOW TO USE A TABLE SAW.

WHAT YOU WILL NEED:

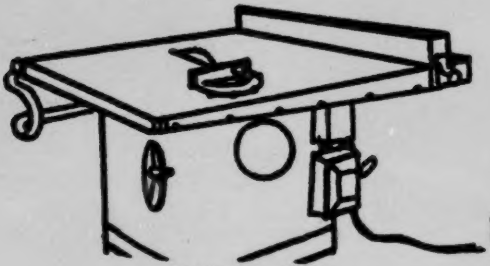
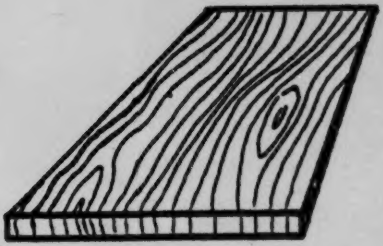
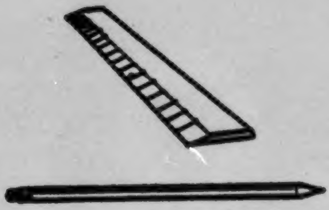


TABLE SAW



PIECE OF WOOD



RULER AND PENCIL

SAFETY GLASSES

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS SAFELY.
3. CUT THE WOOD TO THE RIGHT WIDTH.
4. RIP THE WOOD TO THE RIGHT LENGTH.

WORD GUIDE

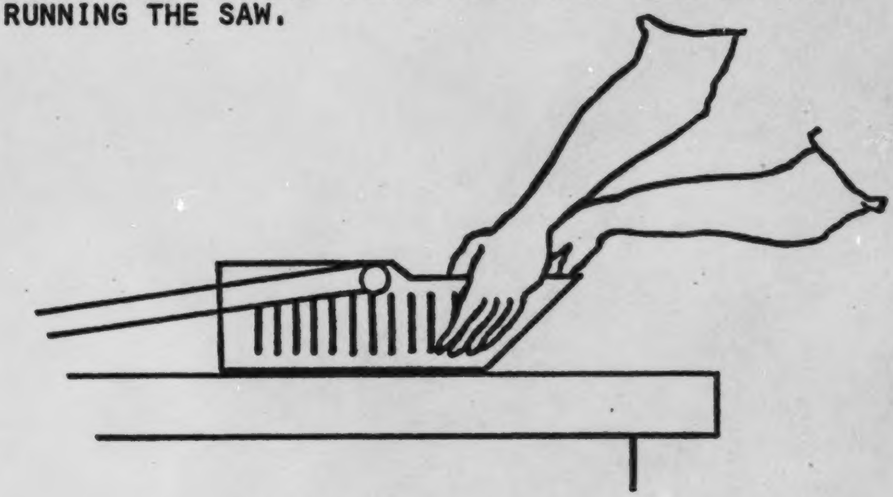
SAW GUARD - THING OVER THE BLADE THAT KEEPS YOUR HAND AWAY.

JOB STEPS

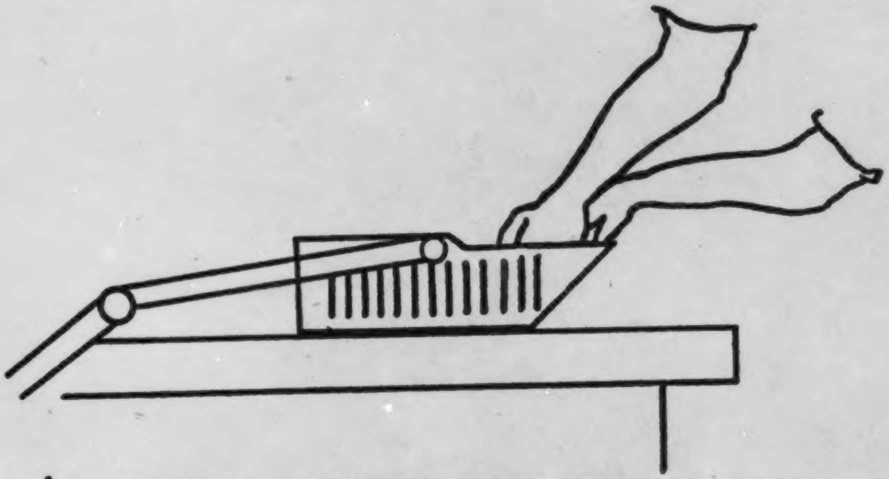
READ:

CAUTION:

A. ALWAYS PUT THE SAW GUARD OVER THE BLADE BEFORE RUNNING THE SAW.



B. NEVER PUT YOUR FINGERS OR HAND INSIDE THE SAW GUARD.



C. ALWAYS UNPLUG THE SAW BEFORE CHANGING BLADES.

D. ALWAYS MAKE SURE THE BLADE IS SHARP.

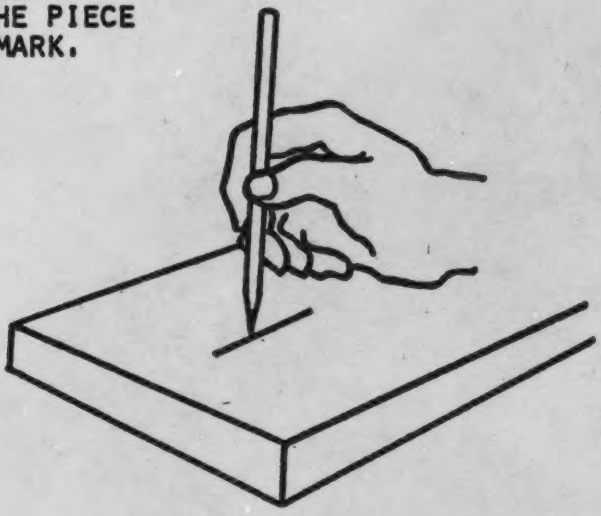
"TURN THE PAGE"

WORD GUIDE

ANGLE GUIDE - THE TOOL THAT SLIDES IN THE GROOVE ON THE TABLE.

READ: 1. MEASURE 2 INCHES WIDE ON THE FRONT EDGE OF THE PIECE OF WOOD AND MAKE A MARK.

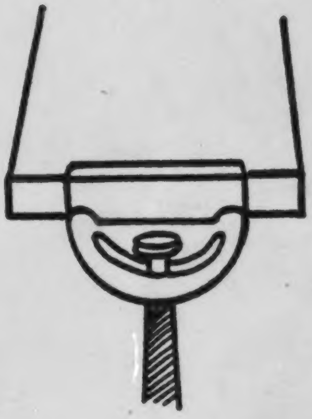
LOOK:



DO: DO JOB STEP 1.

READ: 2. PUT THE BACK EDGE OF THE WOOD IN FRONT OF THE ANGLE GUIDE.

LOOK:

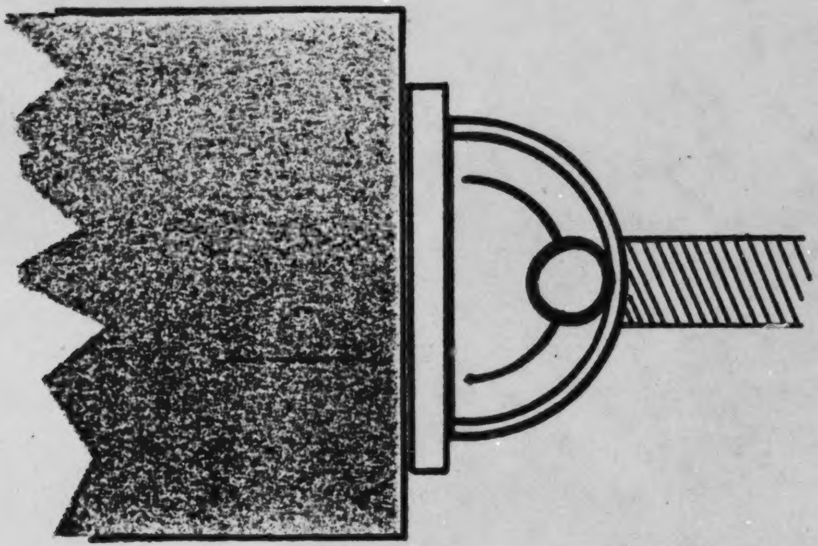


DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: 3. PUT THE ANGLE GUIDE TO THE BACK EDGE OF THE WOOD.

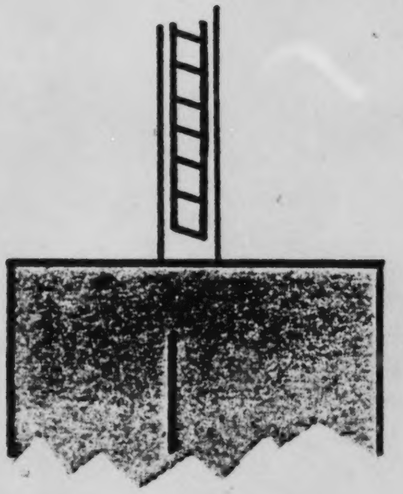
LOOK:



DO: DO JOB STEP 3.

READ: 4. LINE UP THE PENCIL MARK NEXT TO THE SAW BLADE.

LOOK:



DO: DO JOB STEP 4 SO THAT THE PENCIL MARK WILL NOT BE CUT OFF.

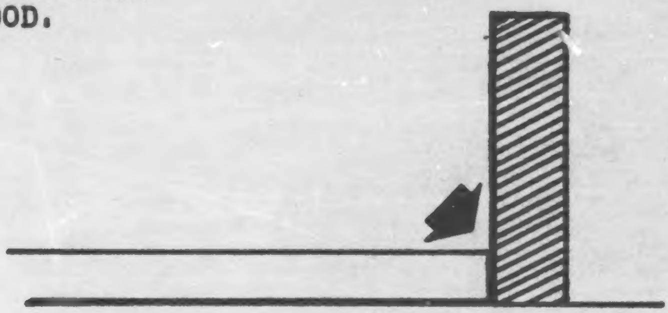
"TURN THE PAGE"

WORD GUIDE

FLUSH - STRAIGHT AND EVEN.

READ: 5. BE SURE THE ANGLE GUIDE IS FLUSH WITH THE BACK EDGE OF THE WOOD.

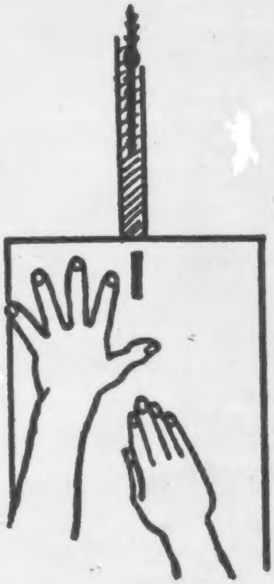
LOOK:



DO: DO JOB STEP 5.

READ: 6. WITHOUT MOVING IT SIDEWAYS, PULL BACK THE WOOD SO THAT IT IS AT LEAST 4 INCHES FROM THE SAW BLADE.

LOOK:



DO: DO JOB STEP 6.

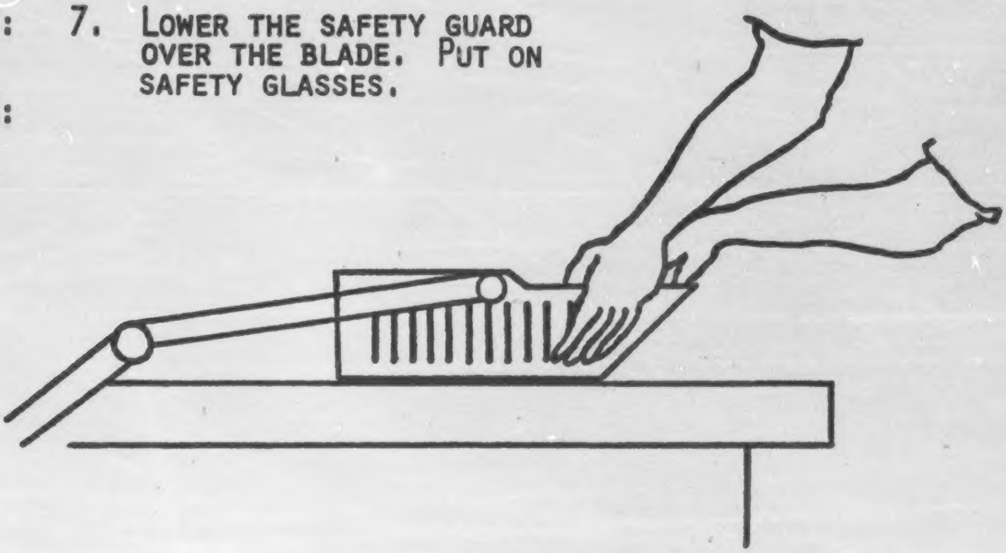
"TURN THE PAGE"

WORD GUIDE

SAFETY GUARD - SHIELD OVER THE BLADE.

READ: 7. LOWER THE SAFETY GUARD OVER THE BLADE. PUT ON SAFETY GLASSES.

LOOK:



DO: DO JOB STEP 7.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

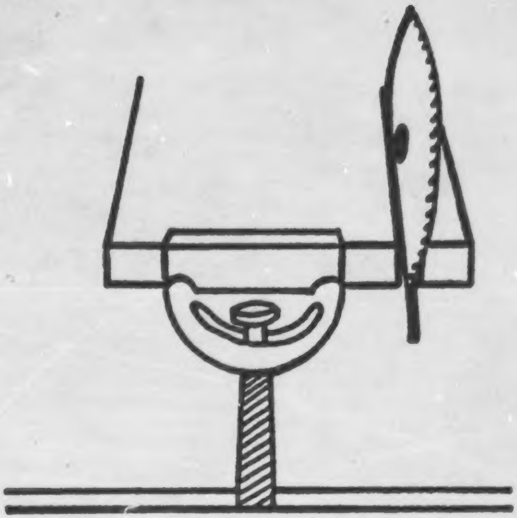
READ: 8. TURN ON THE SAW.

DO: IF YOUR INSTRUCTOR IS WATCHING, DO JOB STEP 8.

"TURN THE PAGE"

READ: 9. SLOWLY PUSH THE WOOD THROUGH THE BLADE USING THE ANGLE GUIDE.

LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING, DO JOB STEP 9.

READ: 10. TURN THE SAW OFF AND WAIT UNTIL THE BLADE STOPS MOVING.

DO: DO JOB STEP 10.

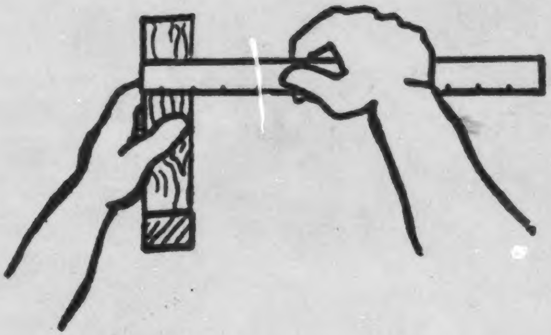
"TURN THE PAGE"

WORD GUIDE

RIP FENCE - THE PIECE OF METAL THAT ADJUSTS SIDEWAYS ON THE TABLE.

READ: 11. MEASURE THE 2 INCH PIECE. IT MUST BE NO MORE THAN 1/16 INCH OFF.

LOOK:



DO: DO JOB STEP 11.

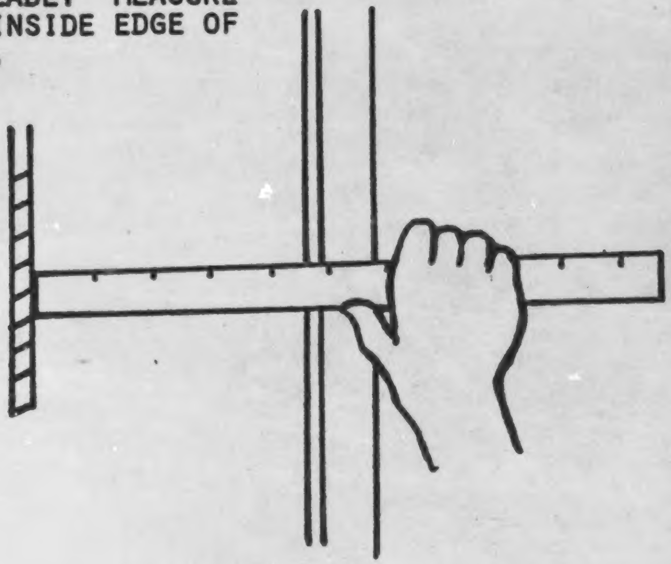
CHECK: ASK YOUR INSTRUCTOR TO LOOK AT YOUR WORK.

READ: NOW YOU CAN PRACTICE USING THE RIP FENCE. BE SURE YOUR INSTRUCTOR HAS TOLD YOU TO KEEP GOING.

"TURN THE PAGE"

READ: 12. MOVE THE RIP FENCE UNTIL IT IS 4 INCHES AWAY FROM THE SAW BLADE. MEASURE FROM THE INSIDE EDGE OF THE BLADE.

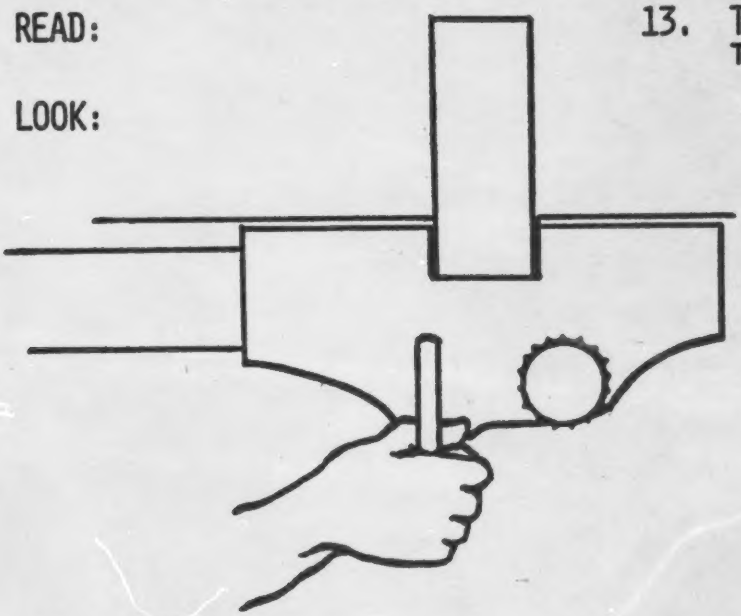
LOOK:



DO: DO JOB STEP 12.

READ: 13. TIGHTEN THE LEVER ON THE RIP FENCE.

LOOK:

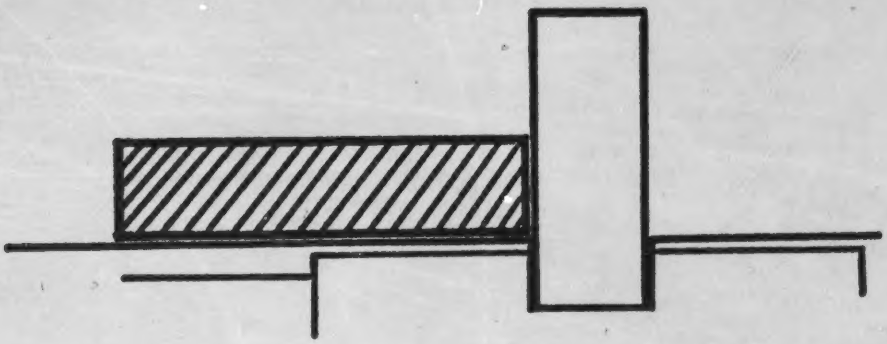


DO: DO JOB STEP 13. BE SURE RIP FENCE DOES NOT MOVE WHEN YOU PUSH THE LEVER DOWN.

"TURN THE PAGE"

READ: 14. PUT THE WOOD TIGHT AGAINST THE RIP FENCE.

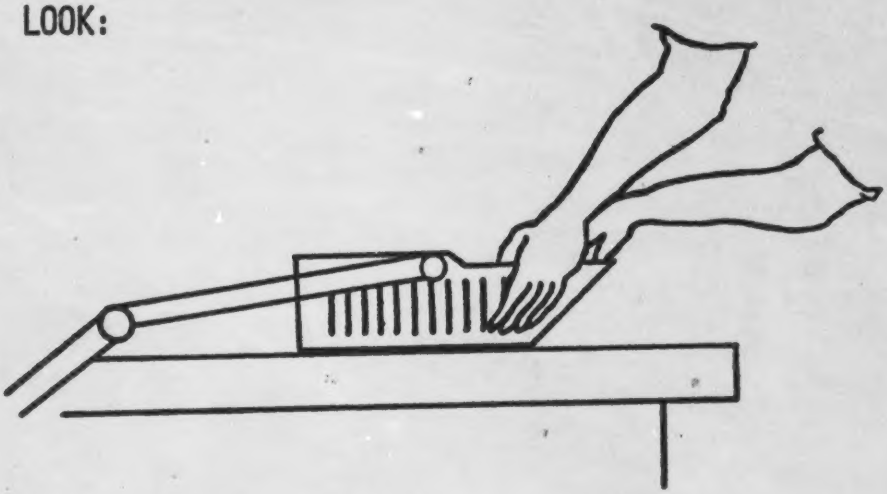
LOOK:



DO: DO JOB STEP 14.

READ: 15. LOWER THE SAFETY GUARD OVER THE BLADE.

LOOK:



DO: DO JOB STEP 15.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

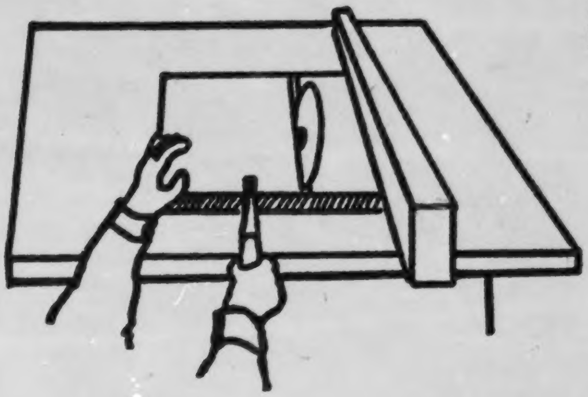
"TURN THE PAGE"

READ: 16. TURN ON THE SAW.

DO: IF YOUR INSTRUCTOR TELLS YOU TO, DO JOB STEP 16. ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 17.

READ: 17. USE A SMALL PIECE OF WOOD TO PUSH THE WOOD SLOWLY THROUGH THE BLADE.

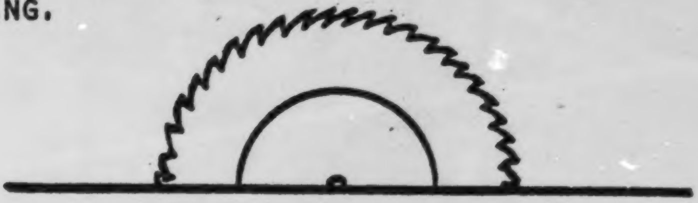
LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 17.

READ: 18. TURN THE SAW OFF AND WAIT FOR THE BLADE TO STOP MOVING.

LOOK:

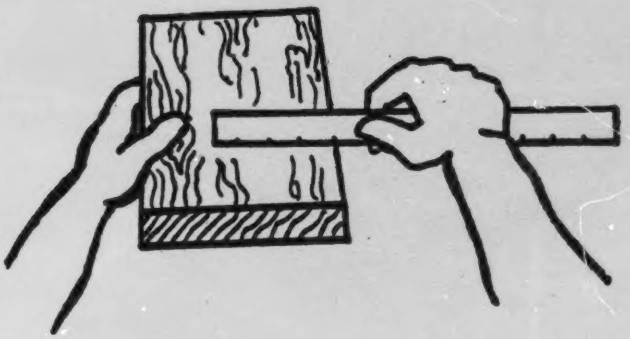


DO: DO JOB STEP 18.

"TURN THE PAGE"

READ: 19. MEASURE THE 4 INCH PIECE OF WOOD. IT MUST BE NO MORE THAN 1/16 INCH OFF.

LOOK:

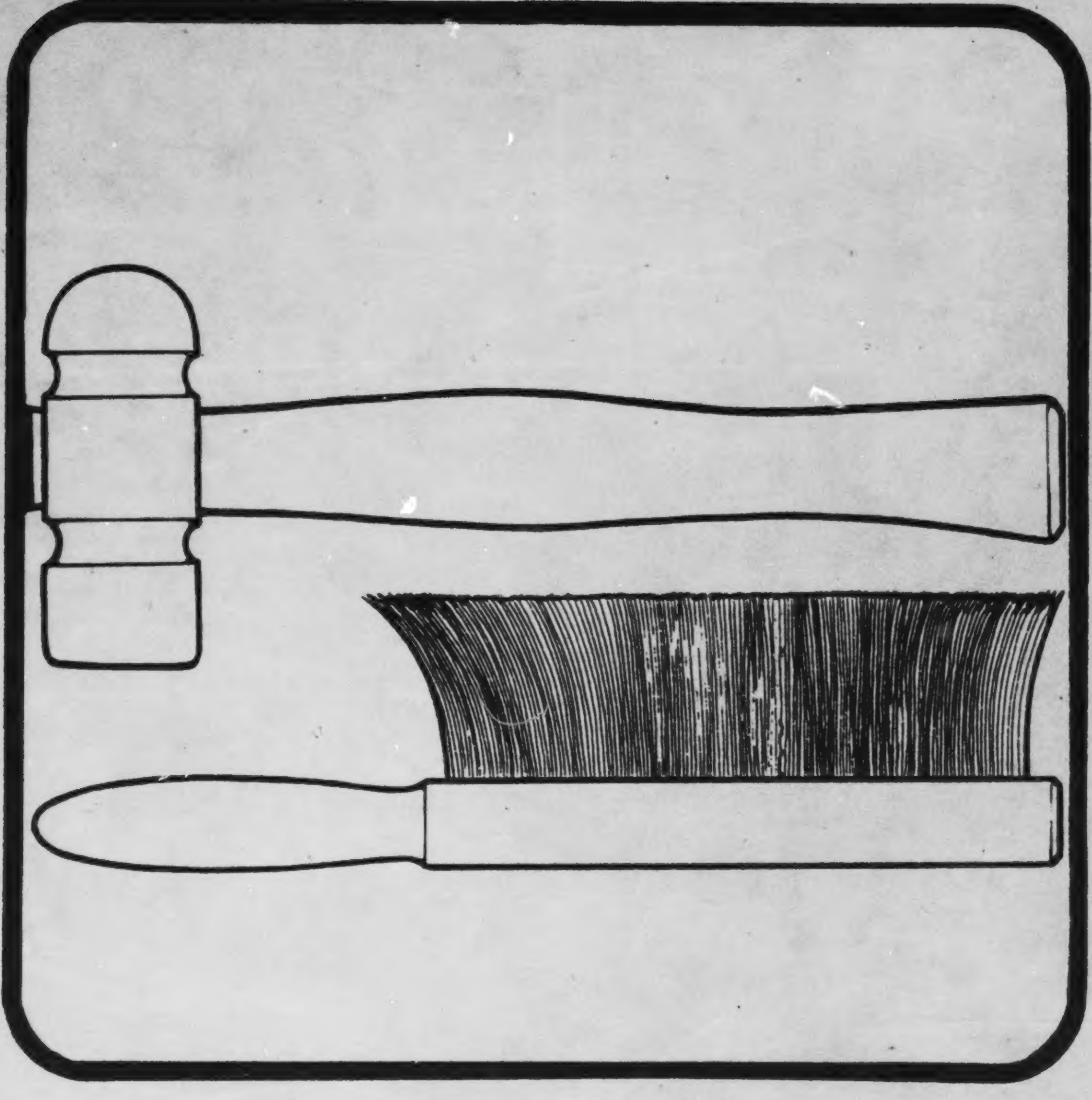


DO: Do JOB STEP 19.

CHECK: ASK YOUR INSTRUCTOR TO WATCH.

READ: 20. CLEAN UP WORK AREA.

DO: Do JOB STEP 20.



building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 005 1 date: FEBRUARY 1977 level: II

skill title: OPERATION OF CIRCULAR SAW

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK

WORD GUIDE

PINCHING - STOPPING THE SAW BLADE BY PUSHING IT INTO THE WOOD TOO HARD.

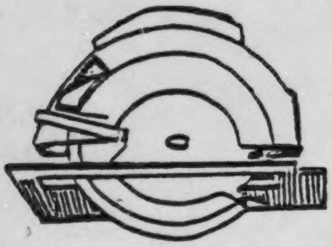
PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

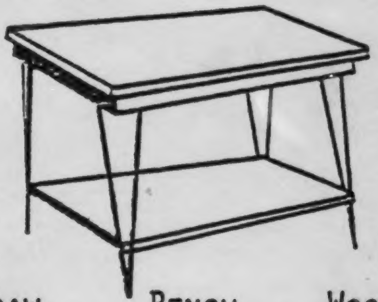
HOW TO USE A CIRCULAR SAW.

WHAT YOU WILL NEED:

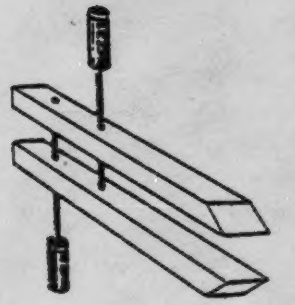
SAFETY GLASSES



CIRCULAR SAW



BENCH



WOOD CLAMPS

PIECE OF WOOD

WHAT YOU MUST DO:

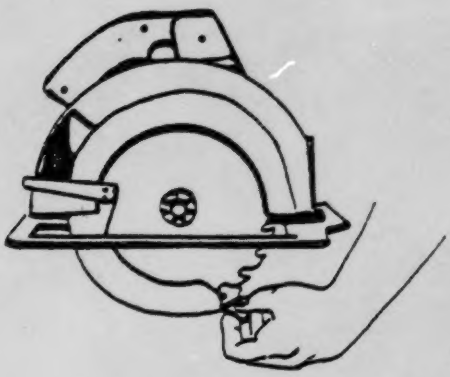
1. READ THE JOB STEPS.
2. DO THE TASKS SAFELY.
3. CUT A STRAIGHT LINE IN THE WOOD WITHOUT PINCHING THE SAW BLADE.

"TURN THE PAGE"

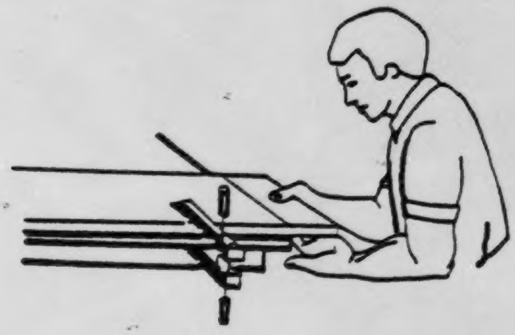
READ:

CAUTION:

A. Be sure the saw guard moves back and forth.



B. Always be sure bench is not under the line of cutting. Never cut the bench with the saw.

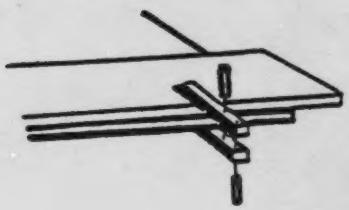


"Turn the page"

READ:

CAUTION:

C. ALWAYS HOLD THE WOOD DOWN WITH A CLAMP.



D. ALWAYS KEEP FINGERS AWAY FROM THE BLADE.

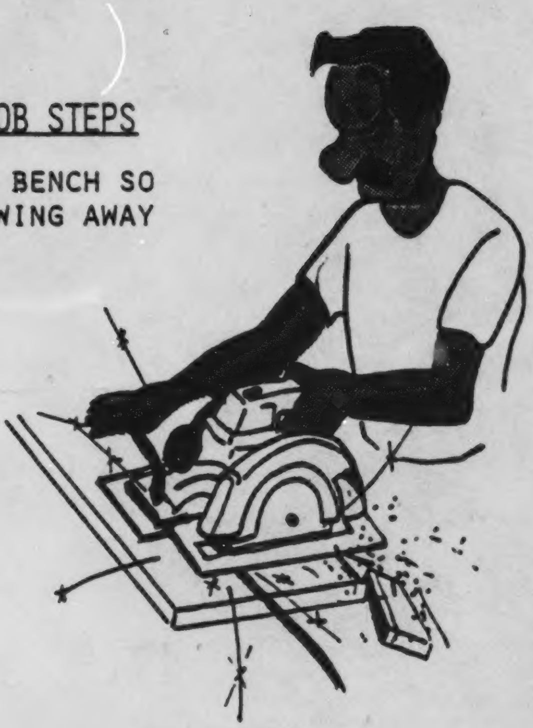
E. ALWAYS PUSH THE SAW SLOWLY AND STRAIGHT.

"TURN THE PAGE"

JOB STEPS

READ: 1. PUT WOOD ON THE BENCH SO THAT YOU WILL BE SAWING AWAY FROM THE EDGE.

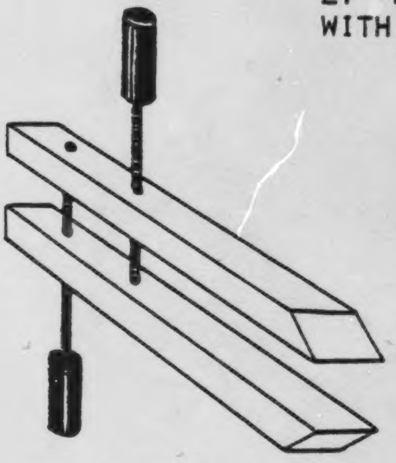
LOOK:



DO: DO JOB STEP 1.

READ: 2. HOLD THE WOOD DOWN WITH A TIGHT CLAMP.

LOOK:



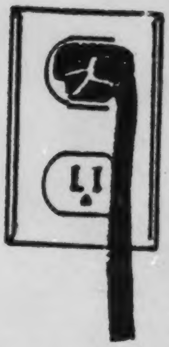
DO: DO JOB STEP 2.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK. ALSO ASK YOUR INSTRUCTOR TO WATCH AS YOU DO THE NEXT JOB STEPS.

"TURN THE PAGE"

READ: 3. Plug the cord in to the outlet.
Keep your finger off the saw switch.

LOOK:

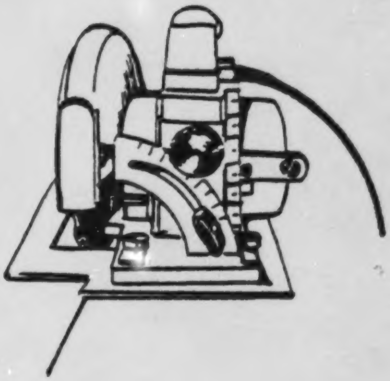


DO: Do job step 3.

CAUTION: Be sure to keep cord away from saw blade.

READ: 4. Set the blade angle so that it will cut straight up and down.

LOOK:



DO: Do job step 4.

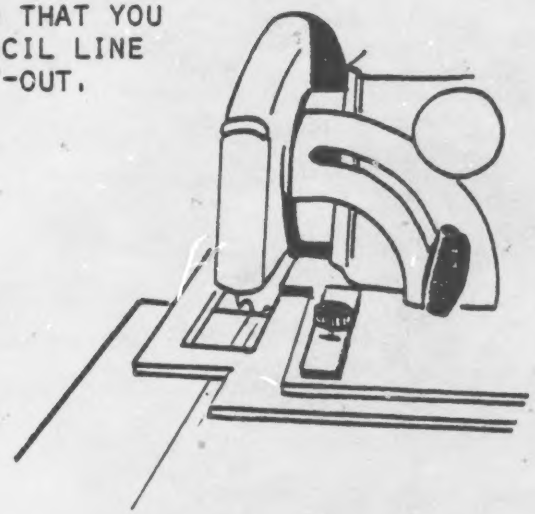
"Turn the page"

WORD GUIDE

CUT-OUT - A SIGHT ON THE SAW USED TO KEEP THE SAW ON A LINE.

READ: 5. PUT FRONT OF THE SAW ON THE TABLE SO THAT YOU CAN SEE THE PENCIL LINE THROUGH THE CUT-OUT.

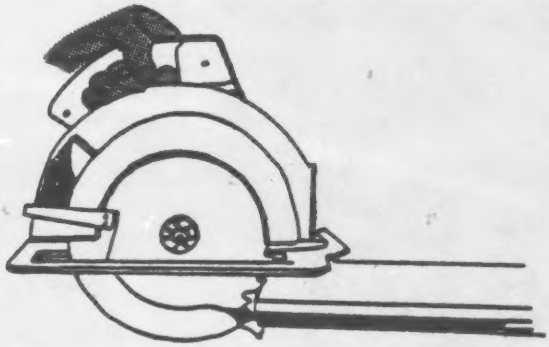
LOOK:



DO: DO JOB STEP 5.

READ: 6. IF MAKING A LONG CUT, SET THE SAW GUIDE.

LOOK:

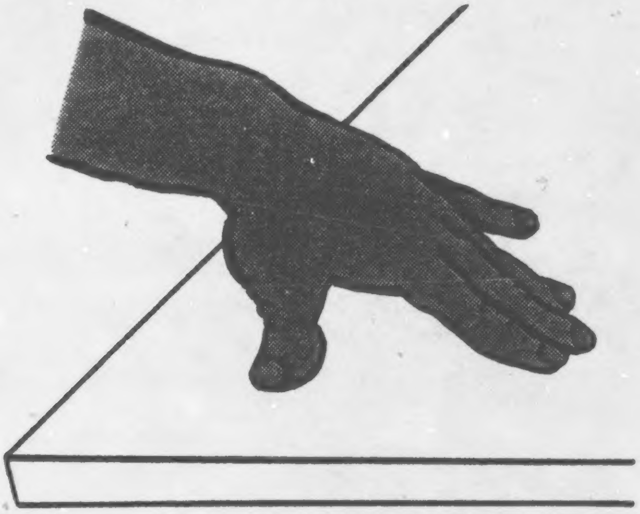


DO: ASK YOUR INSTRUCTOR HOW TO SET THE SAW GUIDE.

"TURN THE PAGE"

READ: 7. Put your left hand on the bench so that your fingers and thumb are on the wood you are cutting. Wear safety glasses.

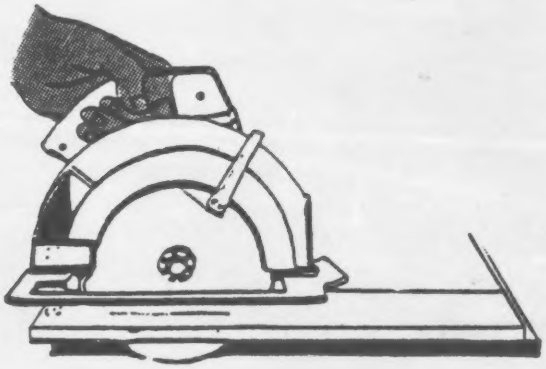
LOOK:



DO: Do job step 7.

READ: 8. Press the switch and push the saw forward with your right hand.

LOOK:

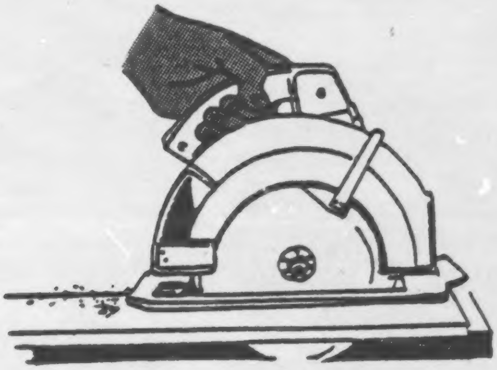


DO: Ask your instructor to watch as you do job step 8.

"Turn the page"

READ: 9. Keep the pencil line in the cut-out as you push the saw forward.

LOOK:



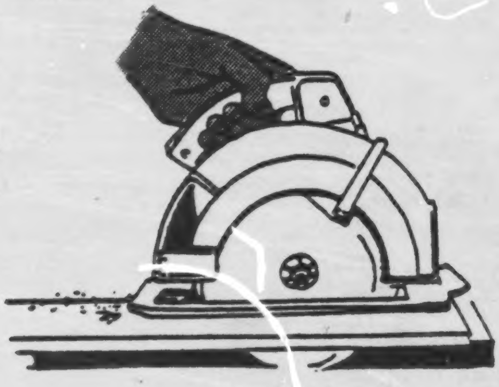
DO: Do job step 9.

CAUTION: Do not push forward too fast. Do not stop the saw until the wood is cut.

"Turn the page"

READ: 10. WHEN WOOD IS CUT, TAKE FINGERS OFF SWITCH.

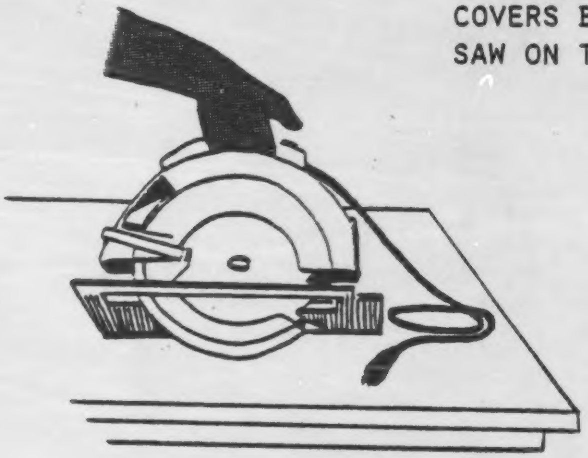
LOOK:



DO: DO JOB STEP 10 AND WAIT UNTIL BLADE STOPS.

READ: 11. BE SURE SAW GUARD COVERS BLADE, THEN PUT SAW ON TABLE.

LOOK:

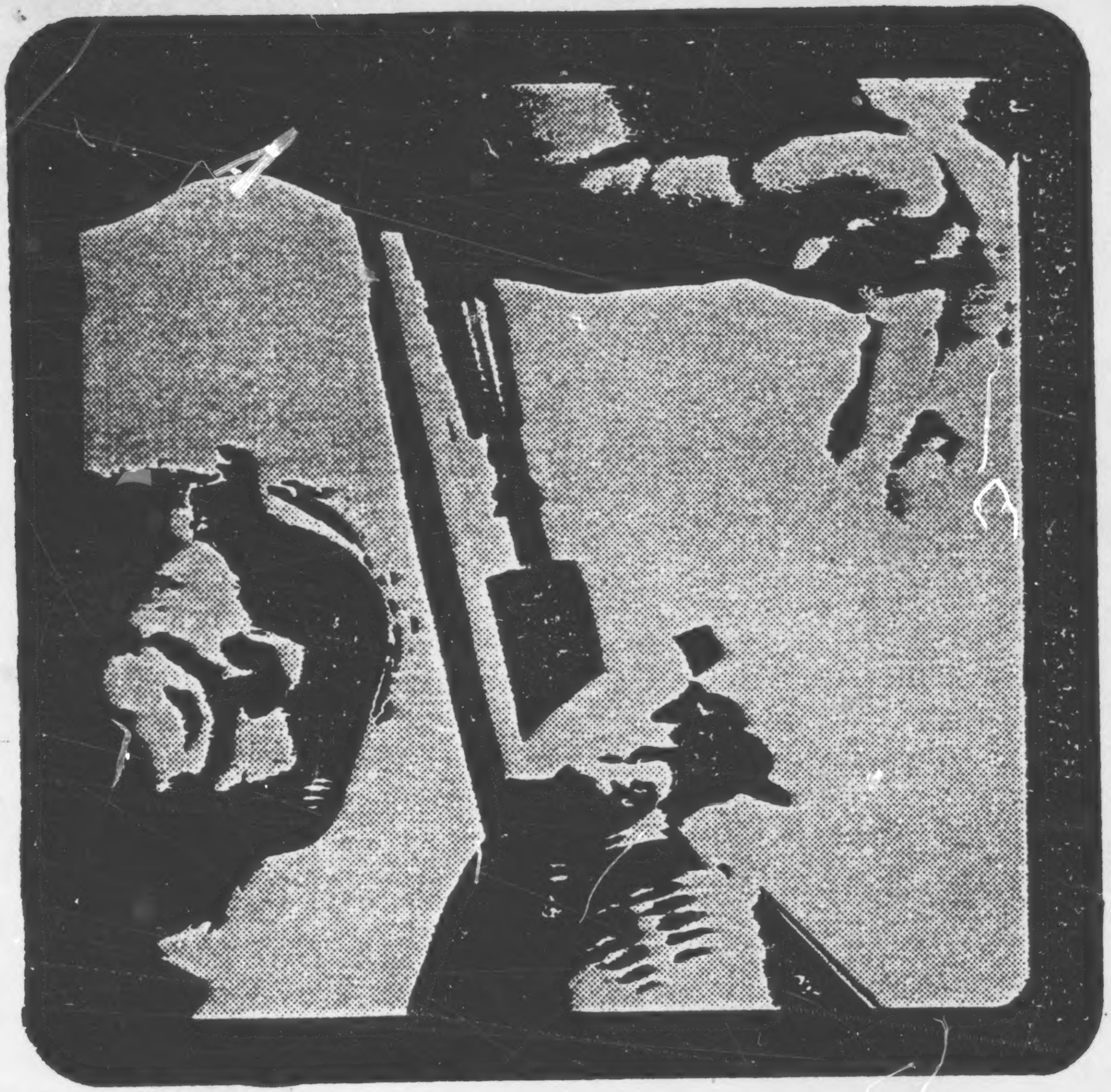


DO: DO JOB STEP 11.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 12. CLEAN UP WORK AREA.

DO: DO JOB STEP 12.



building maintenance & engineering

unit: POWER TOOLS

capital area career center

module: 2201 20 011 1 date: 2/77 level: _____

skill title: USING A SCREWMATE TOOL

developed & written by: MIKE POLEN

visuals by: BILL DRAPER

WORD GUIDE

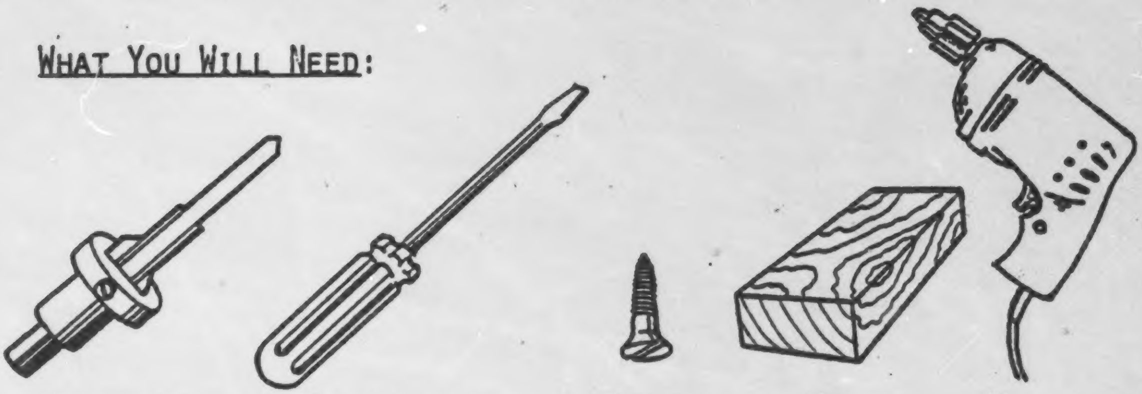
ADJUST - CHANGE THE SETTING.

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

HOW TO ADJUST AND USE A SCREWMATE TOOL.

WHAT YOU WILL NEED:



SCREWMATE TOOL

SCREWDRIVER

SCREW

WOOD

ELECTRIC DRILL

SAFETY GLASSES

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS.
3. ADJUST THE SCREWMATE TOOL TO THE SHAPE OF A SCREW.
4. DRILL THE SCREWMATE TOOL.
5. SCREW IN THE SCREW SO IT IS 1/16 INCH BELOW WOOD SURFACE.

"TURN THE PAGE"

WORD GUIDE

LENGTH - HOW LONG A THING IS.

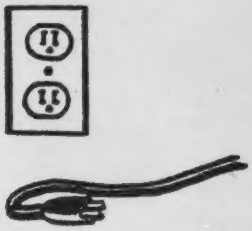
THICKNESS - HOW THICK OR FAT A THING IS.

READ:

****

CAUTION: UNPLUG THE DRILL BEFORE USING THE CHUCK WRENCH.

****



READ: 1. CHOOSE THE BEST SCREW FOR THE JOB YOU ARE DOING. BE SURE IT IS THE RIGHT LENGTH AND THICKNESS.

DO: DO JOB STEP 1.

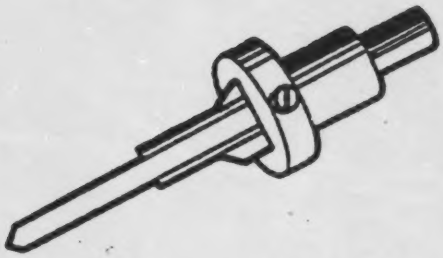
CHECK: ASK YOUR INSTRUCTOR IF YOU HAVE PICKED THE RIGHT SCREW.

"TURN THE PAGE"

JOB STEPS

READ: 2. GET THE SCREWMATE TOOL FOR THE SIZE SCREW YOU ARE USING.

LOOK:



DO: Do JOB STEP 2.

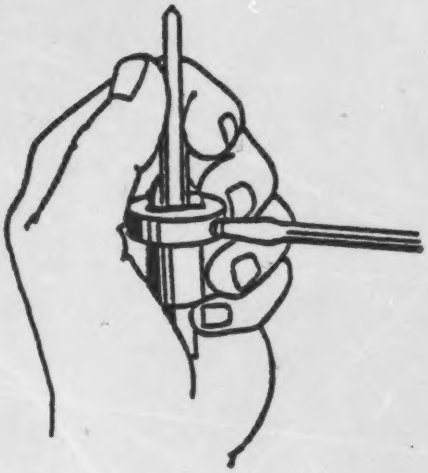
CHECK: ASK YOUR INSTRUCTOR IF YOU HAVE PICKED THE RIGHT SCREWMATE TOOL.

"TURN THE PAGE"

JOB STEPS

READ: 3. LOOSEN THE SET SCREW 1/4 TURN. USE A SCREWDRIVER.

LOOK:

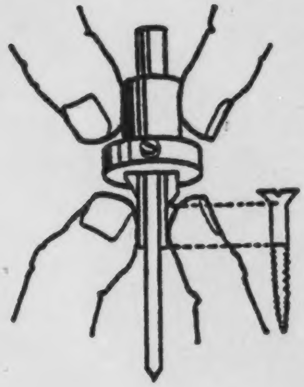


DO: DO JOB STEP 3.

"TURN THE PAGE"

READ: 4. MOVE THE BLACK PART UP OR DOWN SO THAT IT IS AS LONG AS THE SMOOTH PART OF THE SCREW.

LOOK:

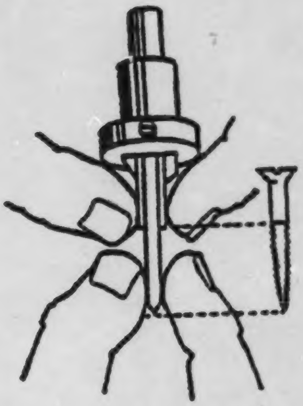


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. HOLD THE BLACK PART IN PLACE AND MOVE THE SMALLER PART UNTIL IT IS AS LONG AS THE THREAD LENGTH OF THE SCREW.

LOOK:



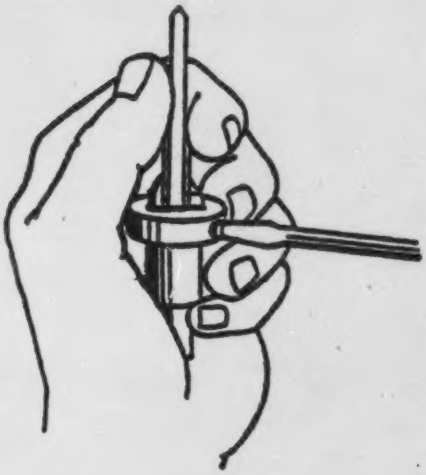
DO: Do job step 5. Be careful not to move the black part.

"Turn the page"

JOB STEPS

READ: 6. HOLDING BOTH PARTS IN PLACE, TIGHTEN THE SET SCREW.

LOOK:



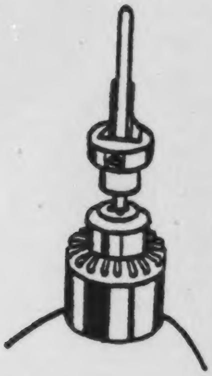
DO: DO JOB STEP 6.

CHECK: SHOW THE TOOL AND SCREW TO YOUR INSTRUCTOR.

"TURN THE PAGE"

READ: 7. PUT THE TOOL IN THE CHUCK AND TIGHTEN THE CHUCK.

LOOK:



DO: DO JOB STEP 7.

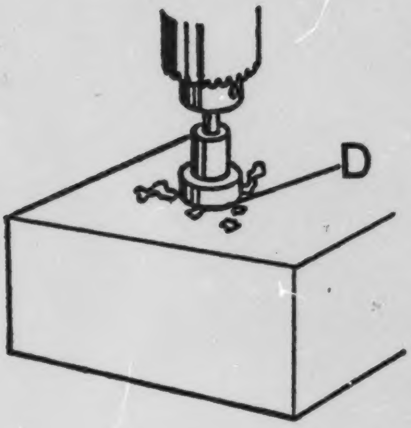
CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 7 AND JOB STEP 8.

"TURN THE PAGE"

JOB STEPS

READ: 8. DRILL INTO THE PIECE OF WOOD TO POINT D.
WEAR SAFETY GLASSES.

LOOK:



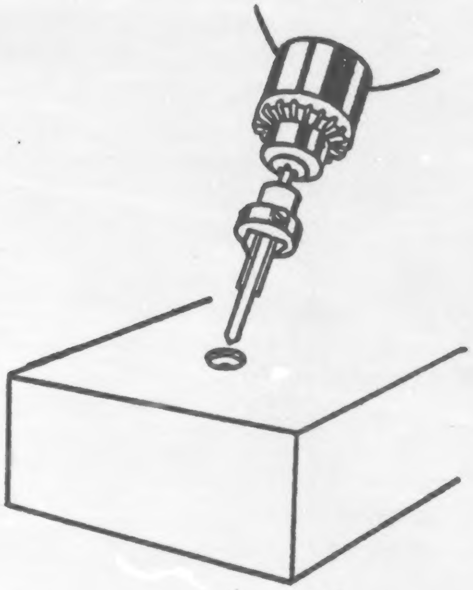
DO: DO JOB STEP 8.

"TURN THE PAGE"

JOB STEPS

READ: 9. TAKE THE TOOL OUT OF THE WOOD.

LOOK:



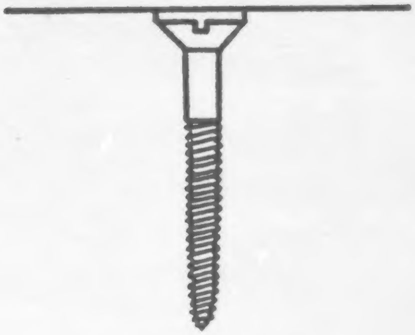
DO: DO JOB STEP 9.

"TURN THE PAGE"

JOB STEPS

READ: 10. PLACE THE SCREW INTO THE HOLE AND SCREW DOWN TO 1/16 INCH BELOW SURFACE. THE JOB SHOULD LOOK LIKE THIS WHEN DONE.

LOOK:



DO: DO JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 10.

READ: 11. CLEAN UP WORK AREA.

DO: DO JOB STEP 11.

building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 001 1 date: 2/77 level:

skill title: WORKING DIAGRAM (LAYOUT)

developed & written by: MIKE POLEN

visuals by: GLEN COOLEY

WORD GUIDE

HEIGHT - How high a thing is.

WIDTH - How wide a thing is.

DEPTH - How far a thing is from front to back.

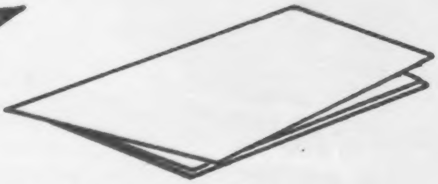
PERFORMANCE OBJECTIVE

What You Will Learn:

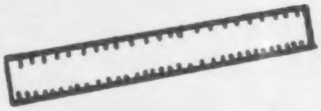
How to make a drawing (layout) of a cabinet.

What You Will Need:

Pencil



Drawing paper



Ruler

What You Must Do:

1. Read the job steps.
2. Make a drawing of a cabinet that shows the height, width, and depth.
3. Measure and write down the inches for the height, width, and depth.

"Turn the page"

WORD GUIDE

SCALE - A PICTURE OF SOMETHING REAL, WITH ALL SIZE RELATIONSHIPS THE SAME ON THE PAPER AS ON THE OBJECT.

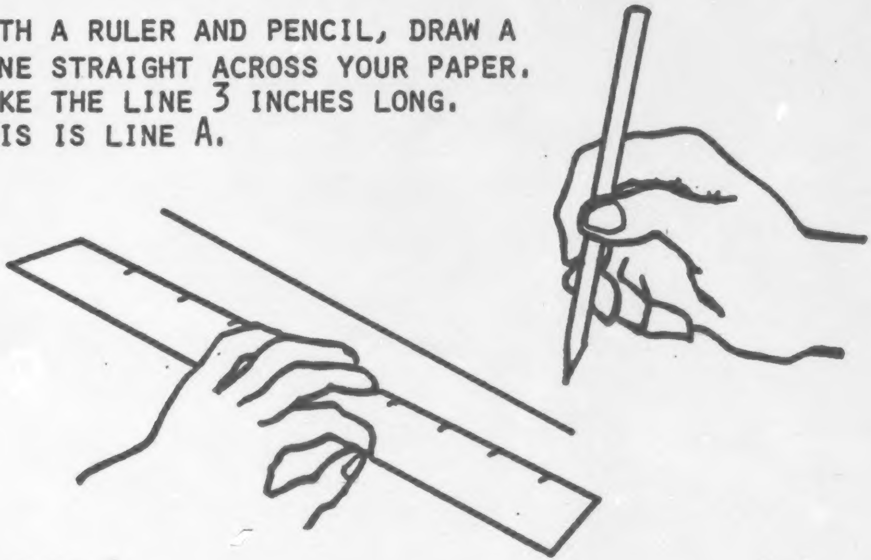
READ: REMEMBER THE SCALE OF YOUR DRAWING WILL BE 1 INCH TO 1 FOOT. THIS MEANS THAT 1 INCH ON YOUR DRAWING WILL BE THE SAME AS 1 FOOT ON THE REAL CABINET THAT YOU WILL MAKE. IF YOUR DRAWING IS 2 INCHES HIGH YOUR CABINET WILL BE 2 FEET HIGH.

CHECK: TELL YOUR INSTRUCTOR HOW HIGH YOUR REAL CABINET WILL BE IF YOUR DRAWING IS 3 INCHES HIGH.

JOB STEPS

READ: 1. WITH A RULER AND PENCIL, DRAW A LINE STRAIGHT ACROSS YOUR PAPER. MAKE THE LINE 3 INCHES LONG. THIS IS LINE A.

LOOK:



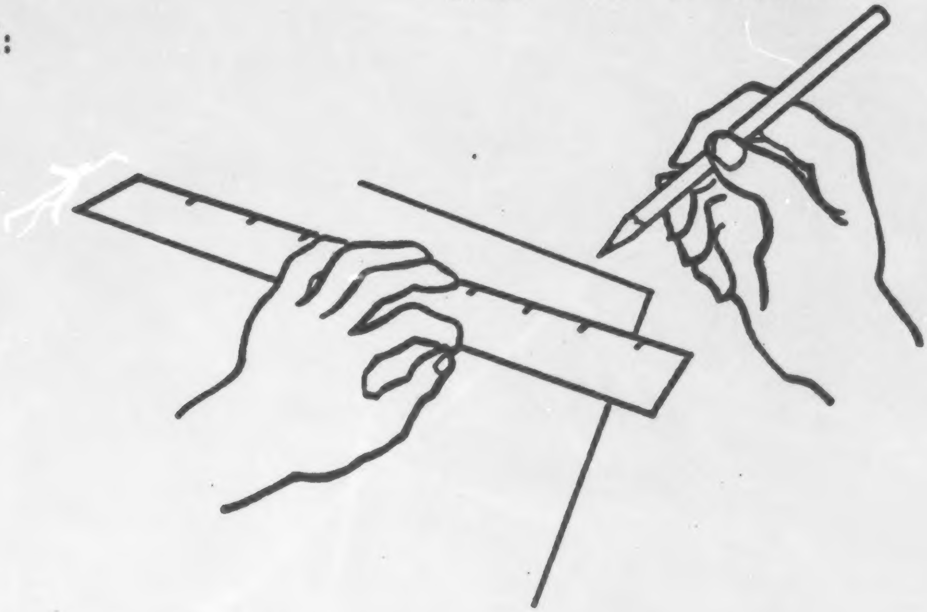
DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

READ: 2. NOW DRAW A LINE STRAIGHT DOWN FROM THE LEFT END OF YOUR FIRST LINE. MAKE THIS LINE 4 INCHES LONG. THIS IS LINE B.

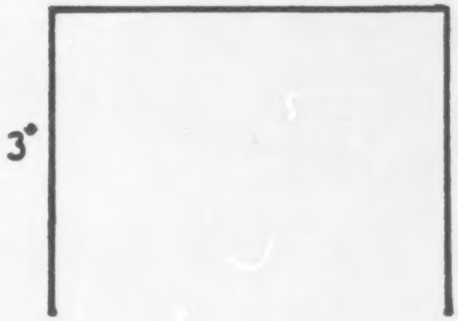
LOOK:



DO: DO JOB STEP 2.

READ: 3. DRAW LINE C THE SAME LENGTH AS LINE A. WRITE "3 INCHES" BESIDE THE LINE.

LOOK:

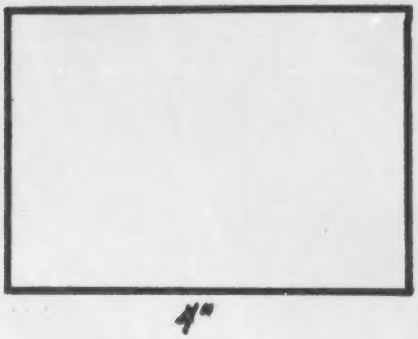


DO: DO JOB STEP 3.

"TURN THE PAGE"

READ: 4. Now draw line D the same length as line B. Write "4 inches" beside the line.

LOOK:

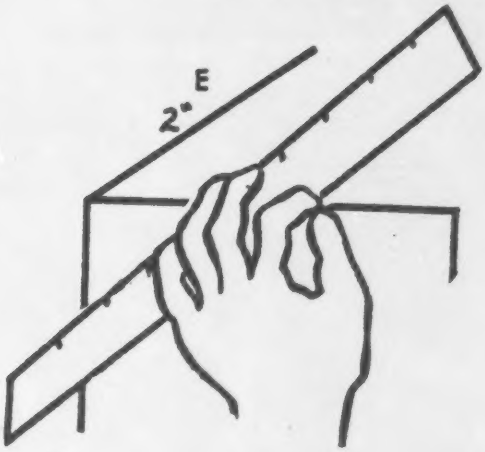


DO: Do job step 4.

CHECK: Ask your instructor to check your work.

READ: 5. Draw line E. Write "2 inches" beside the line.

LOOK:

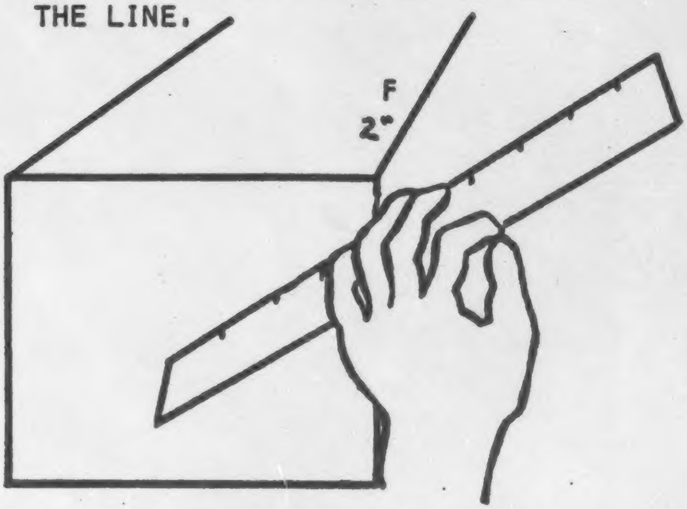


DO: Do job step 5.

"Turn the page"

READ: 6. DRAW LINE F THE SAME LENGTH AS LINE E. WRITE "2 INCHES" BESIDE THE LINE.

LOOK:

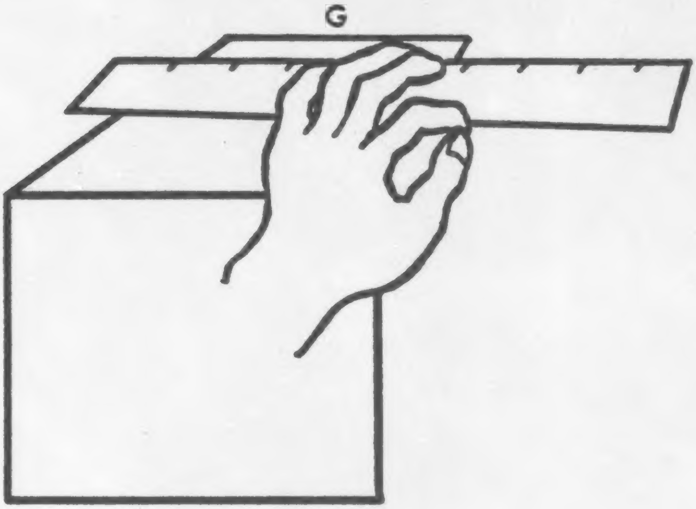


DO: Do JOB STEP 6.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 7. CONNECT LINES E AND F WITH LINE G. LINE G SHOULD BE THE SAME LENGTH AS LINE A. WRITE "3 INCHES" BESIDE THE LINE.

LOOK:

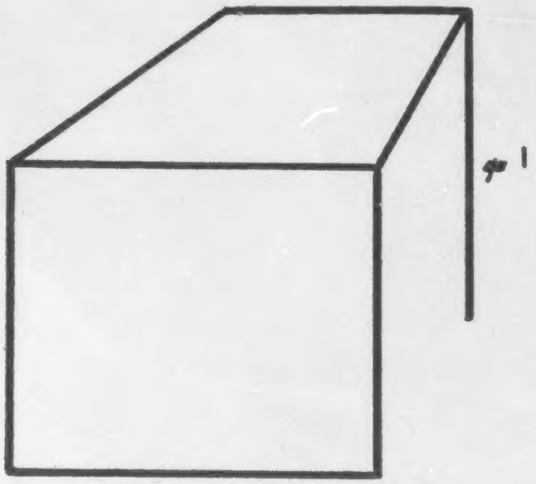


DO: Do JOB STEP 7.

"TURN THE PAGE"

READ: 8. DRAW LINE I THE SAME LENGTH AS LINE D. WRITE "4 INCHES" BESIDE THE LINE.

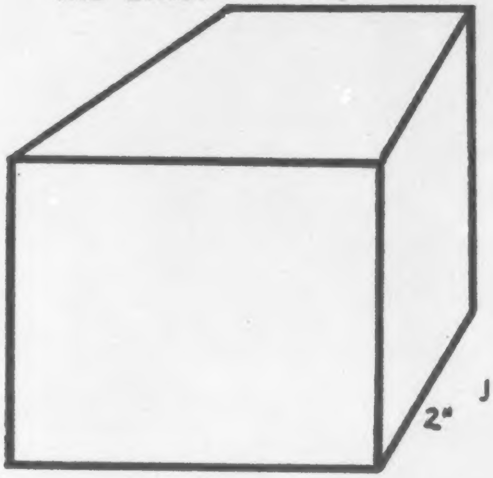
LOOK:



DO: Do JOB STEP 8.

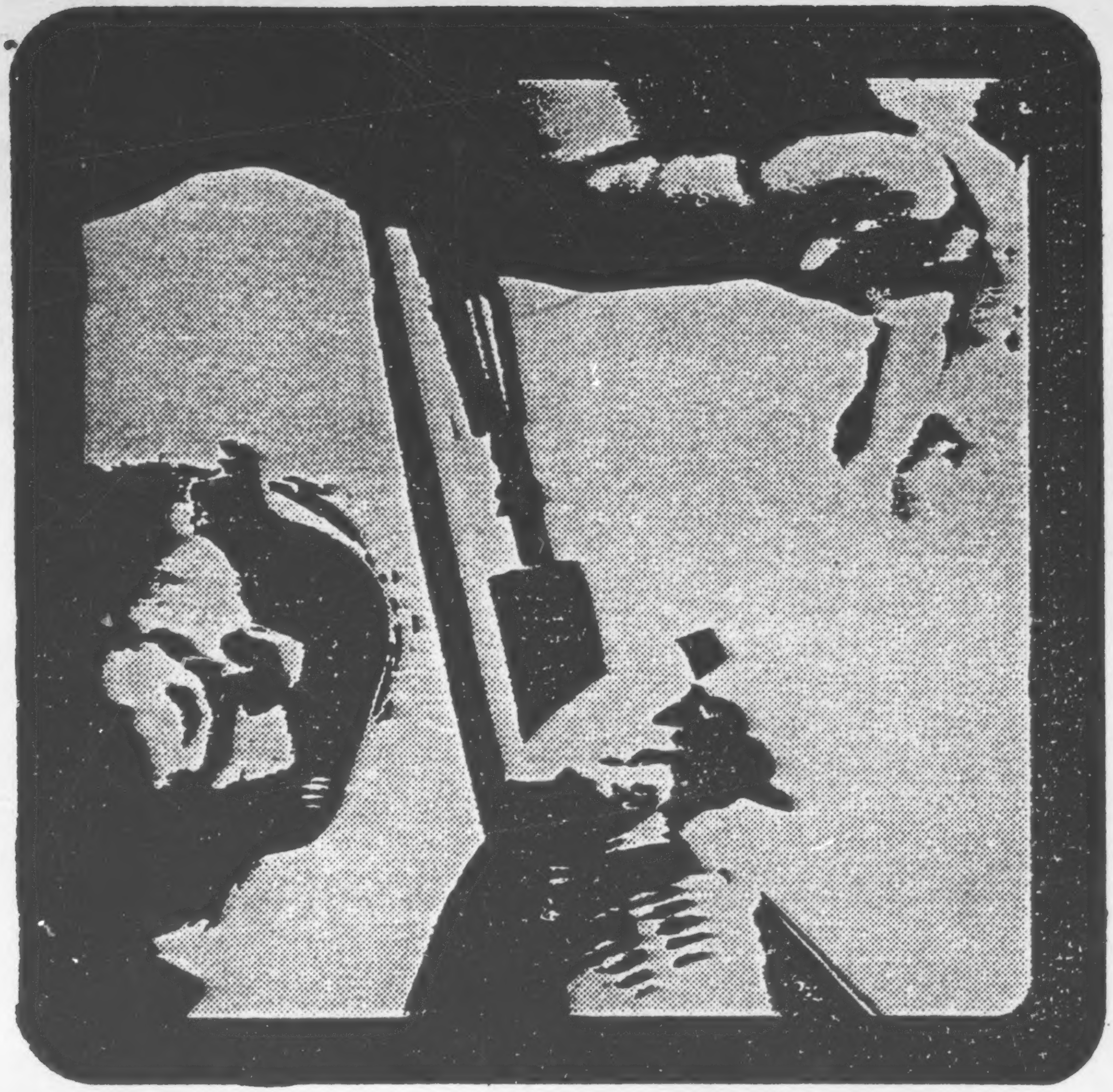
READ: 9. DRAW LINE J THE SAME LENGTH AS LINE F. WRITE "2 INCHES" BESIDE THE LINE.

LOOK:



DO: Do JOB STEP 9.

CHECK: TAKE YOUR DRAWING TO YOUR INSTRUCTOR.



building maintenance & engineering

unit: Cabinet Construction

capital area career center

module: 2201 21 002 1 date: 2/77 level: II

skill title: Cutting parts for fabrication

developed & written by: Mike Polen

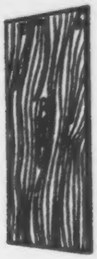
visuals by:

PERFORMANCE OBJECTIVE

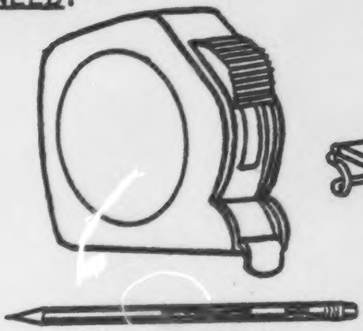
WHAT YOU WILL LEARN:

HOW TO USE YOUR LAY-OUT WHEN CUTTING OUT THE PIECES OF YOUR CABINET.

WHAT YOU WILL NEED:



PLYWOOD SHEET



TAPE MEASURE AND PENCIL

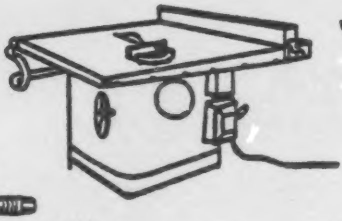
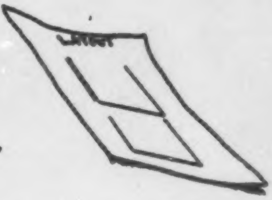


TABLE SAW OR CIRCULAR SAW



LAY-OUT

SAFETY GLASSES

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS.
3. MEASURE AND CUT THE PLYWOOD FOR YOUR CABINET.

"TURN THE PAGE"

WORD GUIDE

SAW GUARD - GUARD THAT GOES AROUND THE OPEN PART OF THE BLADE. IT IS SPRING LOADED AND WILL ALWAYS BE AROUND THE BLADE WHEN IT IS NOT CUTTING MATERIAL.

JOB STEPS

READ: BEFORE CUTTING THE PLYWOOD, BE SURE YOUR INSTRUCTOR IS WITH YOU.

READ:

CAUTION:

A. BE SURE FLOOR HAS NO TRASH ON IT.

B. BE SURE THE SAW GUARD IS ON THE SAW.

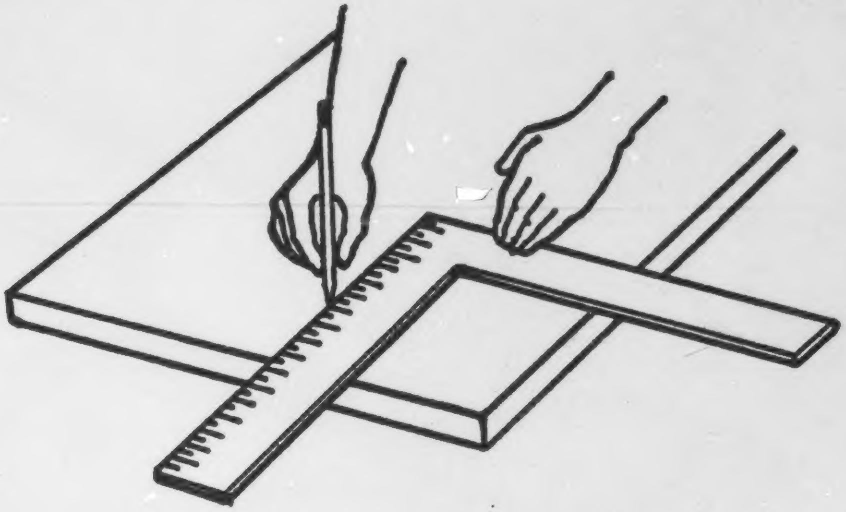
DO: CHECK THE SAW GUARD AND THE FLOOR.

"TURN THE PAGE"

JOB STEPS

READ: 1. MEASURE AND DRAW LINES ON THE PLYWOOD FOR EACH PIECE OF YOUR CABINET. USE YOUR LAY-OUT. REMEMBER: 1 INCH ON YOUR LAY-OUT IS THE SAME AS 1 FOOT ON THE PLYWOOD.

LOOK:



WRITE A NUMBER ON EACH PIECE YOU HAVE DRAWN. YOUR FIRST PIECE SHOULD BE NUMBERED "1". YOUR SECOND PIECE SHOULD BE NUMBER "2". KEEP DRAWING UNTIL EACH PIECE HAS ITS OWN NUMBER.

DO: DO STEP 1.

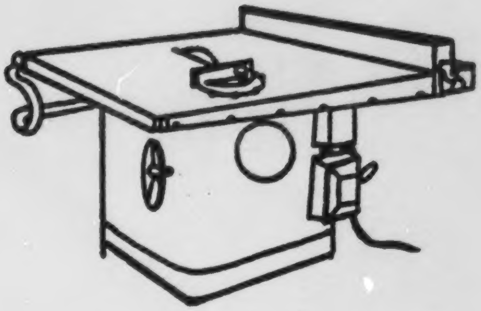
CHECK: YOU SHOULD END UP WITH 5 PIECES. WHEN YOU ARE FINISHED, SHOW THE PLYWOOD TO YOUR INSTRUCTOR.

"TURN THE PAGE"

JOB STEPS

READ: 2. Set up the saw as you did on the module for the use of the saw you are using.

LOOK:



DO: Do job step 2.

CHECK: Ask your instructor to check your work.

"Turn the page"

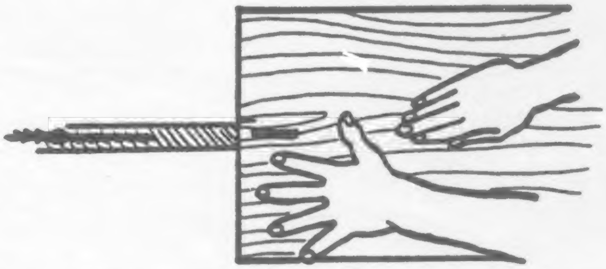
WORD GUIDE

RIP CUTS - To SAW CUTS WITH THE WOOD GRAIN.

JOB STEPS

READ: 3. MAKE ALL RIP CUTS. FOLLOW YOUR PENCIL LINES, BUT DO NOT CUT THEM OFF. WEAR SAFETY GLASSES.

LOOK:

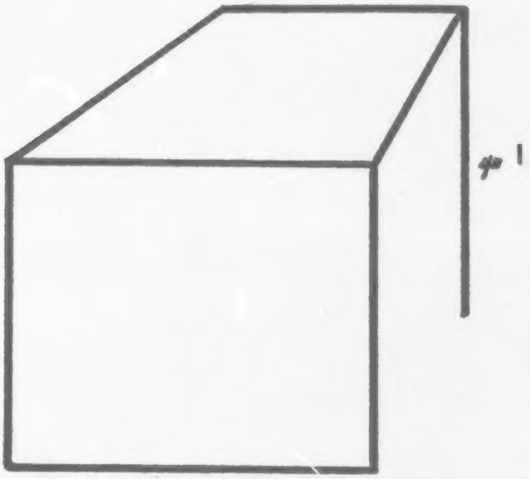


DO: IF YOU INSTRUCTOR IS WATCHING, DO JOB STEP 3.

"TURN THE PAGE"

READ: 8. DRAW LINE I THE SAME LENGTH AS LINE D. WRITE "4 INCHES" BESIDE THE LINE.

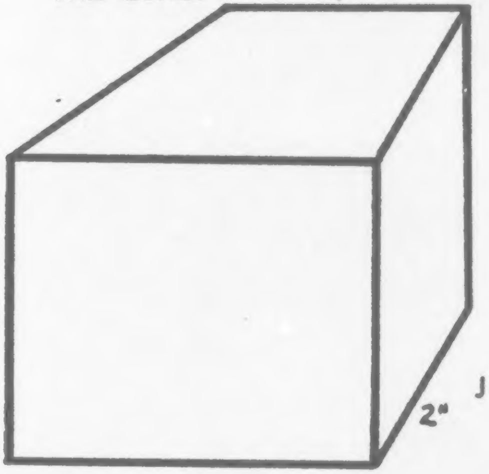
LOOK:



DO: Do JOB STEP 8.

READ: 9. DRAW LINE J THE SAME LENGTH AS LINE F. WRITE "2 INCHES" BESIDE THE LINE.

LOOK:



DO: Do JOB STEP 9.

CHECK: TAKE YOUR DRAWING TO YOUR INSTRUCTOR.

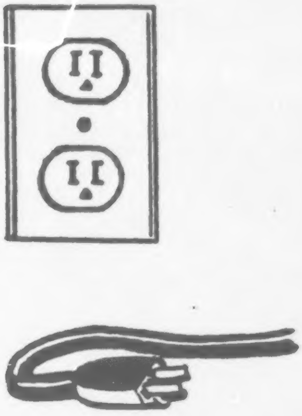
READ: 10. PUT AWAY EQUIPMENT.

DO: Do JOB STEP 10.

JOB STEPS

READE: 5. When all cuts are made, unplug the saw.

LOOK:



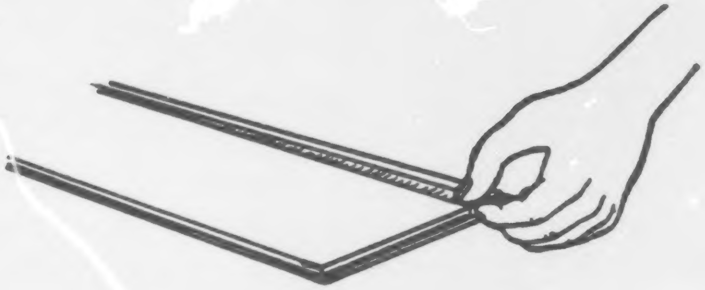
DO: Do job step 5.

"Turn the page"

JOB STEPS

READ: 6. CHECK THE MEASUREMENTS OF YOUR PIECES.

LOOK:



DO: DO JOB STEP 6.

CHECK: SHOW THE PIECES TO YOUR INSTRUCTOR.

READ: 7. CLEAN UP WORK AREA.

DO: DO JOB STEP 7.

building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 003 1 date: 2/77 level: 11

skill title: CONSTRUCT CABINET

developed & written by: MIKE POLEN

visuals by: BILL DRAPER

WORD GUIDE

SQUARE - STRAIGHT AND EVEN.

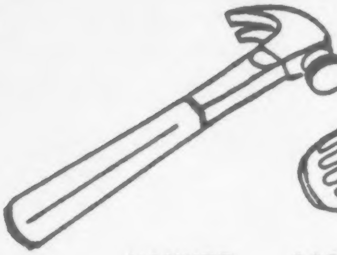
JOINTS - PLACES WHERE PARTS COME TOGETHER.

PERFORMANCE OBJECTIVE

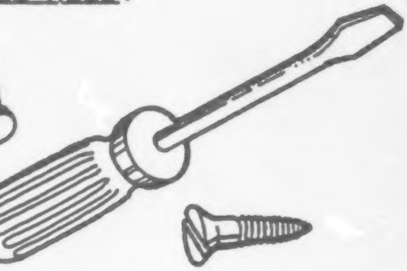
WHAT YOU WILL LEARN:

HOW TO PUT TOGETHER THE CABINET PARTS.

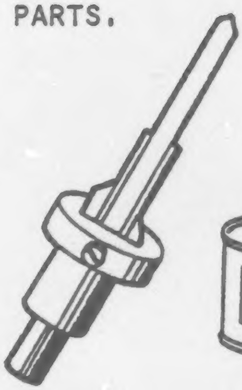
WHAT YOU WILL NEED:



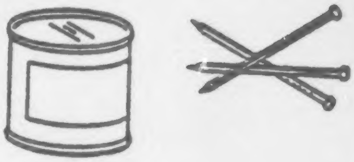
HAMMER



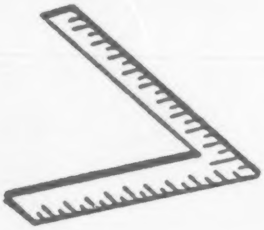
SCREWDRIVER & SCREWS



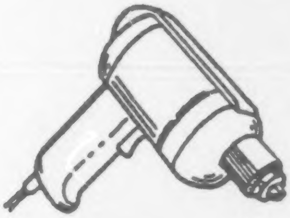
SCREWMATE TOOL



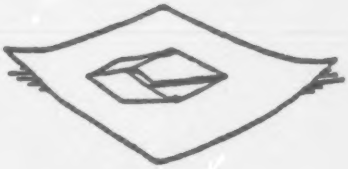
NAILS & GLUE



CARPENTER'S SQUARE



ELECTRIC HAND DRILL



LAYOUT DRAWING

SAFETY GLASSES

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS.
3. PUT TOGETHER THE CABINET PARTS SO THAT THE ENDS ARE SQUARE AND THE JOINTS ARE SOLID.

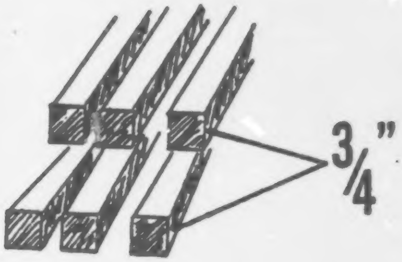
WORD GUIDE

SQUARE - THE SIDES ARE THE SAME WIDTH.

JOB STEPS

READ: 1. GET 6 PIECES OF WOOD THAT ARE ABOUT 3/4 INCH SQUARE.

LOOK:



DO: DO JOB STEP 1.

CHECK: BE SURE THE SQUARE PIECES ARE NOT LONGER THAN YOUR CABINET SIDE PIECES.

"TURN THE PAGE"

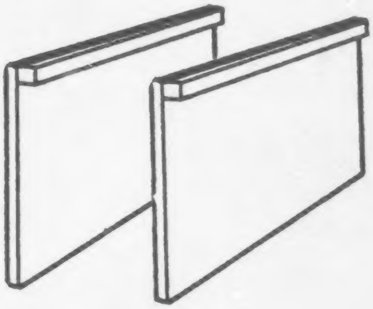
WORD GUIDE

FLUSH - EVEN AND STRAIGHT WITH THE EDGE.

JOB STEPS

READ: 2. PUT A 3/4 INCH SQUARE PIECE ON THE TOP EDGE OF BOTH SIDE PIECES.

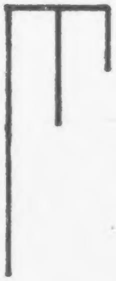
LOOK:



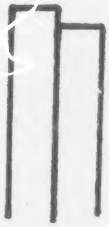
DO: DO JOB STEP 2 SO EACH SIDE PIECE LOOKS LIKE THE PICTURE. THE SQUARE PIECES MUST BE FLUSH WITH THE TOP EDGE OF THE SIDE PIECES.

LOOK:

FLUSH



NOT FLUSH

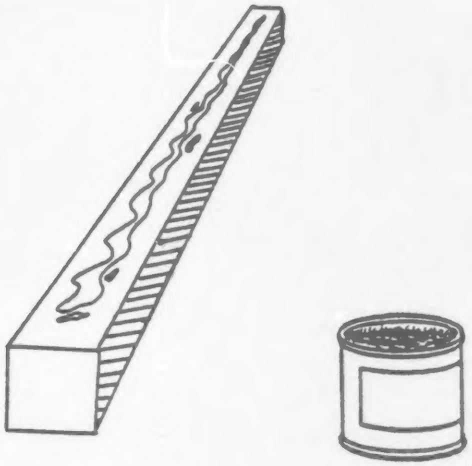


"TURN THE PAGE"

JOB STEPS

READ: 3. GLUE ONE SIDE OF THE SQUARE PIECES.

LOOK:



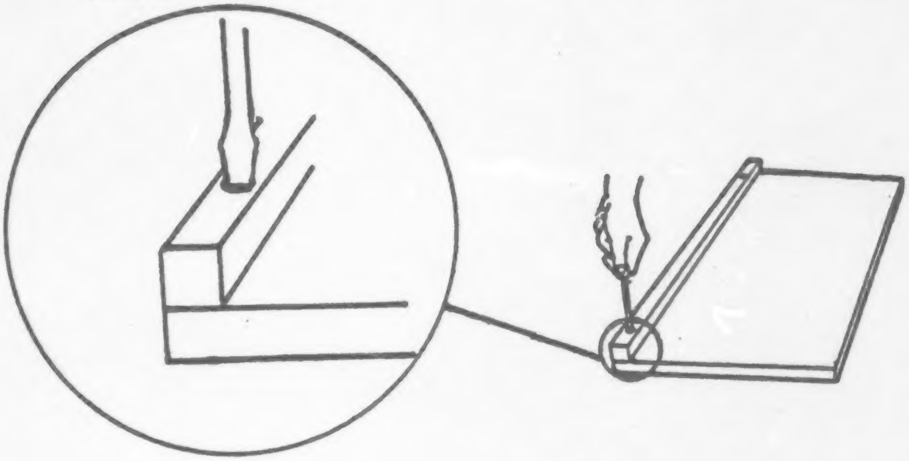
DO: DO JOB STEP 3, THEN QUICKLY GO TO JOB STEP 4.

"TURN THE PAGE"

JOB STEPS

READ: 4. SCREW THE SQUARE PIECES TO THE SIDE PIECES. BE SURE THE GLUED SIDE IS AGAINST THE SIDE PIECE. BE SURE THAT THE SQUARE PIECES ARE FLUSH WITH THE TOP EDGE OF THE SIDE PIECES AS IN JOB STEP 2.

LOOK:



DO: DO JOB STEP 4 QUICKLY.

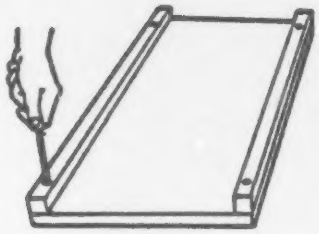
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 5. GLUE AND SCREW SQUARE PIECES TO THE BOTTOM EDGES OF THE SIDE PIECES.

LOOK:



DO: DO JOB STEP 5 THE SAME THAT YOU DID JOB STEPS 3 AND 4.

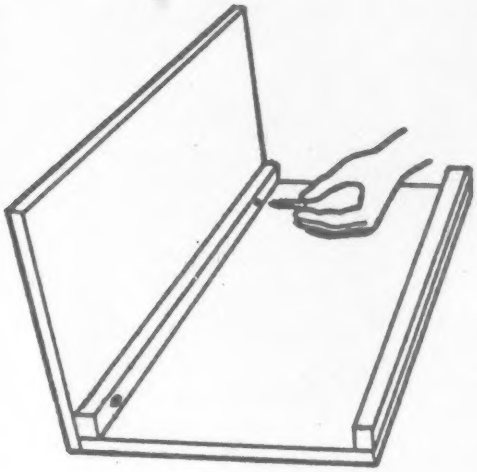
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 6. GLUE AND SCREW THE TOP PIECE TO ONE SIDE PIECE. THE TOP PIECE SHOULD BE GLUED AND SCREWED ONTO THE SQUARE PIECE.

LOOK:



DO: DO JOB STEP 6, AND BE SURE EDGES ARE FLUSHED.

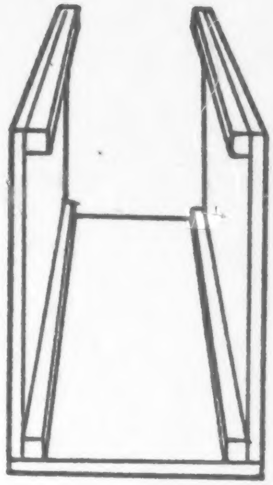
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 7. NOW PUT ON THE OTHER SIDE PIECES.

LOOK:



DO: DO JOB STEP 7 THE SAME WAY THAT YOU DID JOB STEP 6.

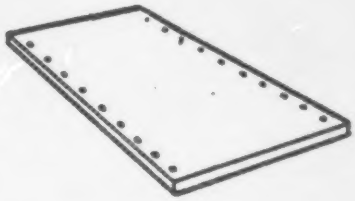
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 8. PUT YOUR BOTTOM PIECE ON THE TABLE.

LOOK:



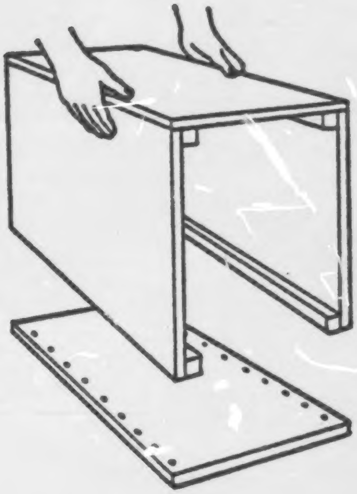
DO: DO JOB STEP 8.

"TURN THE PAGE"

JOB STEPS

READ: 9. PUT THE SIDE PIECES ON THE EDGES OF YOUR BOTTOM PIECE.

LOOK:



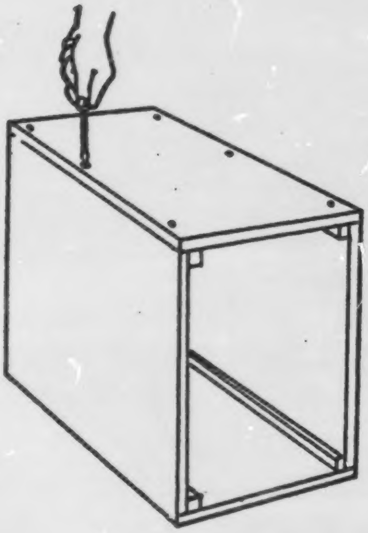
DO: DO JOB STEP 9.

"TURN THE PAGE"

JOB STEPS

READ: 10. Now glue and screw your bottom piece to the square pieces on the side piece.

LOOK:



DO: Do job step 10. Be sure edges are flush.

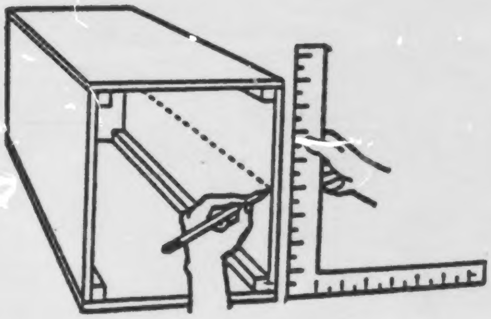
CHECK: Ask your instructor to check your work.

"Turn The Page"

JOB STEPS

READ: 11. MEASURE HALF-WAY UP THE SIDE PIECES AND MAKE A MARK.

LOOK:



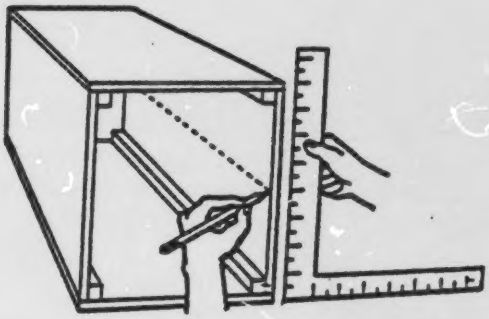
DO: DO JOB STEP 11.

"TURN THE PAGE"

JOB STEPS

READ: 12. REPEAT JOB STEP 11 ON THE OTHER END OF EACH SIDE PIECE.

LOOK:



DO: Do JOB STEP 12.

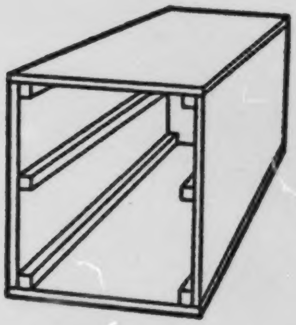
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 13. GLUE AND SCREW A 3/4 INCH SQUARE PIECE TO EACH SIDE PIECE. THE TOP OF THE SQUARE PIECES SHOULD BE EVEN WITH YOUR PENCIL MARKS.

LOOK:



DO: DO JOB STEP 13.

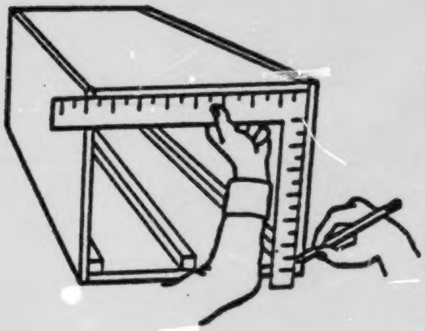
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 14. MEASURE THE AMOUNT OF INCHES BETWEEN YOUR TWO SIDE PIECES. BE SURE TO MEASURE BETWEEN THE INSIDE EDGES.

LOOK:



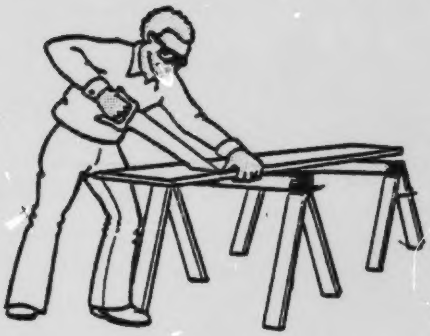
DO: DO JOB STEP 14. THIS IS TO FIND OUT THE WIDTH OF YOUR MIDDLE SHELF.

"TURN THE PAGE"

JOB STEPS

READ: 15. Now cut a middle shelf to fit the inches you measured in job step 14. Wear safety glasses.

LOOK:



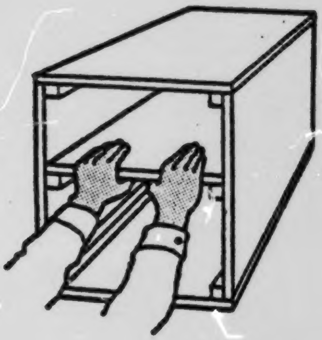
DO: Do job step 15, if your instructor is watching you.

"Turn The Page"

JOB STEPS

READ: 16. PUT THE SHELF ON THE 3/4 INCH SQUARE PIECES IN THE MIDDLE OF EACH SIDE PIECE. GLUE AND SCREW THE SHELF TO THE SQUARE PIECES.

LOOK:



DO: DO JOB STEP 16.

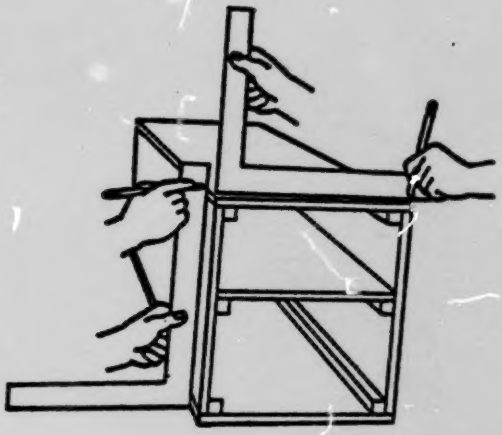
CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 17. MEASURE THE HEIGHT AND WIDTH OF THE BACK OF YOUR CABINET. MEASURE BETWEEN THE OUTSIDE EDGES.

LOOK:



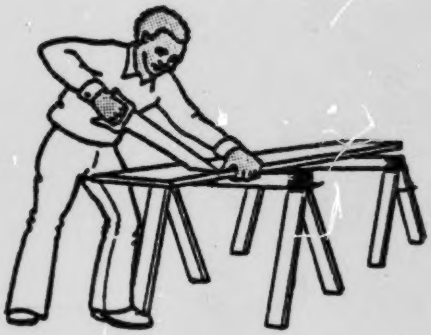
DO: DO JOB STEP 17. THIS IS FOR YOUR BACK PIECE.

"TURN THE PAGE"

JOB STEPS

READ: 18. CUT YOUR BACK PIECE TO FIT THE MEASUREMENTS YOU MADE IN JOB STEP 17.

LOOK:



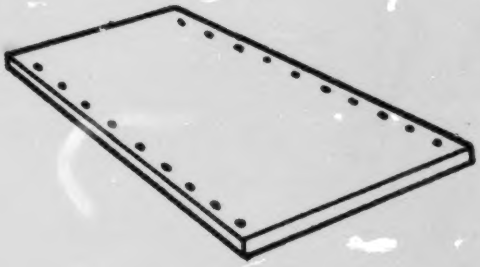
DO: DO JOB STEP 18, IF YOUR INSTRUCTOR IS WATCHING YOU.

"TURN THE PAGE"

JOB STEPS

READ: 19. PUT YOUR CABINET FRONT DOWN ON THE FLOOR.

LOOK:



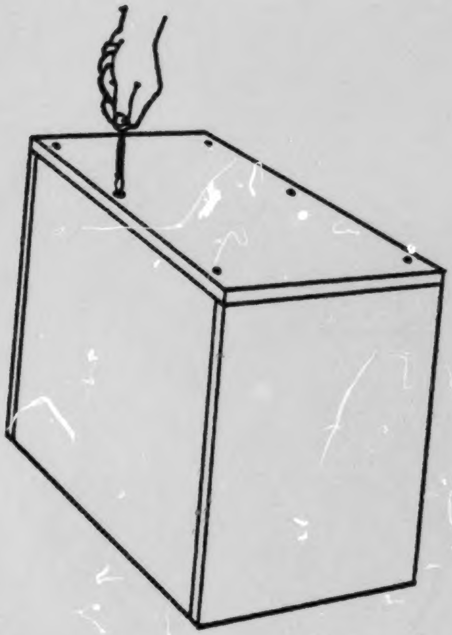
DO: Do JOB STEP 19.

"TURN THE PAGE"

JOB STEPS

READ: 20. PUT THE BACK PIECE ON. GLUE AND SCREW IT TO ALL THE ENDS OF THE SQUARE PIECES.

LOOK:

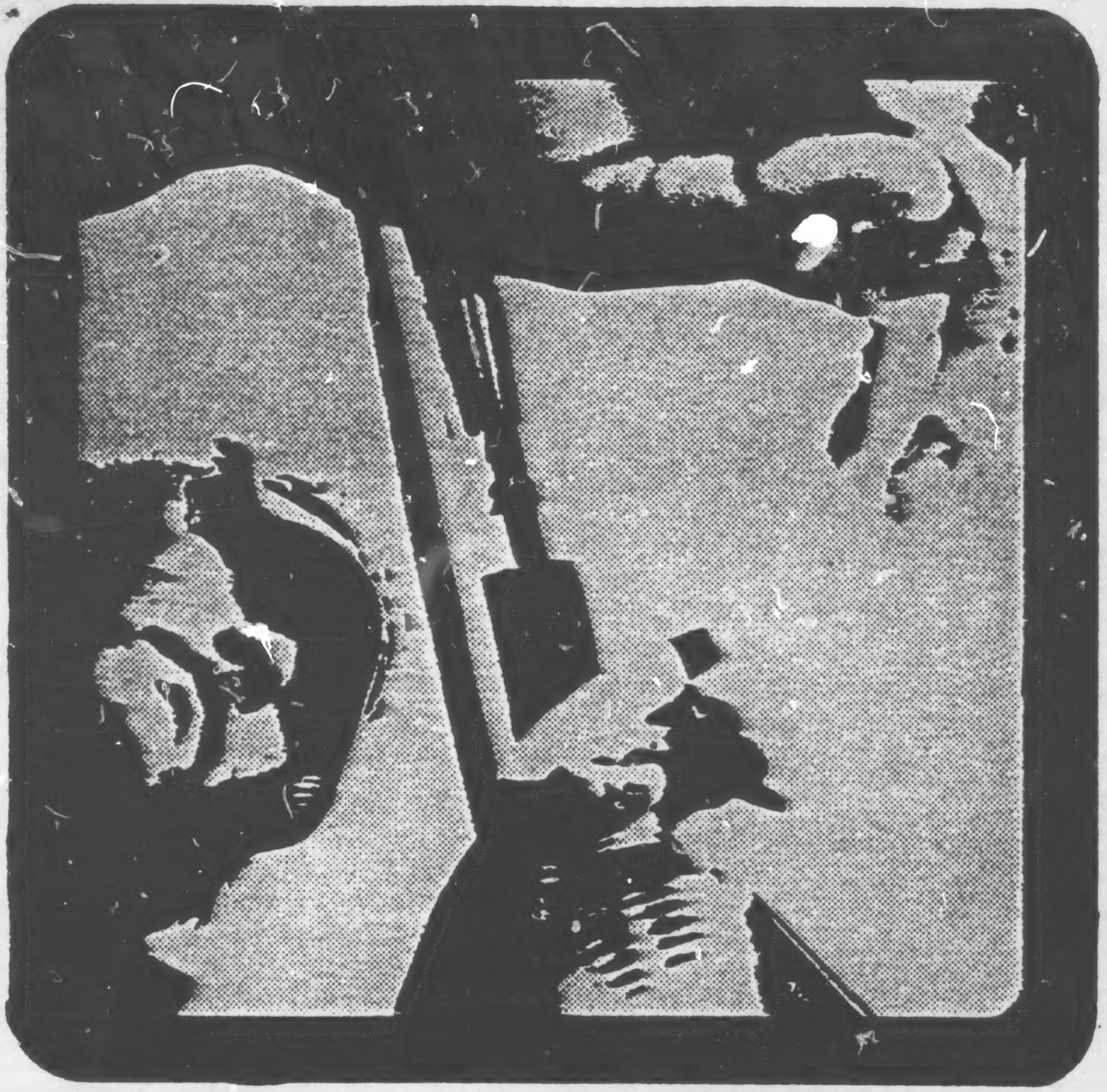


DO: DO JOB STEP 20.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 21. CLEAN UP YOUR AREA AND PUT AWAY TOOLS.

DO: DO JOB STEP 21.



building maintenance & engineering

unit: CABINET CONSTRUCTION

capital area career center

module: 2201 21 004 1 date: 2/77 level: II

skill title: FABRICATE DOORS - INSET

developed & written by: MIKE POLEN

visuals by: CHUCK KNOCK

WORD GUIDE

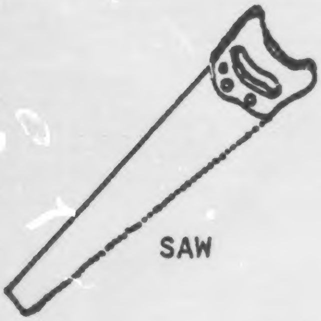
INSET - INSIDE AN OPENING.

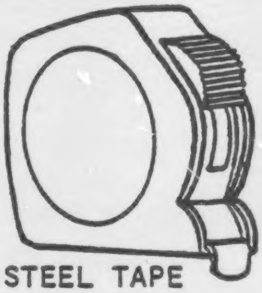
PERFORMANCE OBJECTIVE

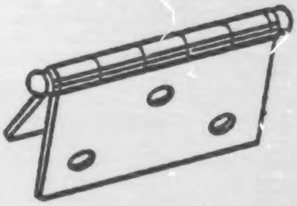
WHAT YOU WILL LEARN:

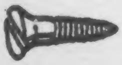
HOW TO MAKE INSET DOORS FOR CABINETS.

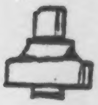
WHAT YOU WILL NEED:

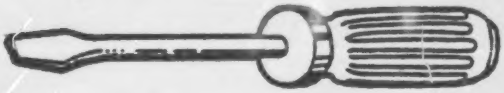

SAW

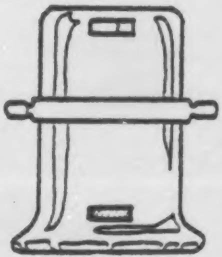

STEEL TAPE

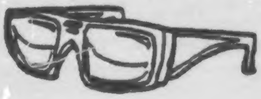

HINGES


SCREWS


BIT


SCREWDRIVER


ROUTER


SAFETY GLASSES

WHAT YOU MUST DO:

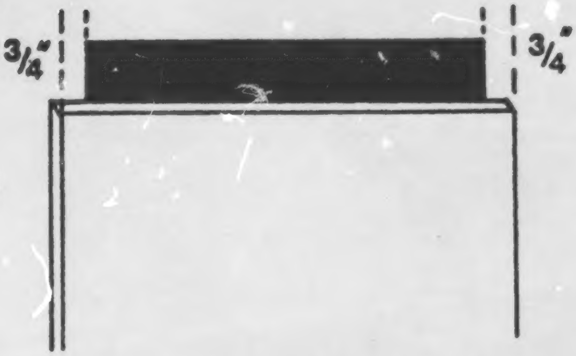
1. READ THE JOB STEPS.
2. DO THE TASKS.
3. CUT A DOOR TO FIT A CABINET OPENING.
4. PUT THE HINGES ON IN SUCH A WAY THAT THE DOOR WON'T STICK.

"TURN THE PAGE"

JOB STEPS

READ: 1. MEASURE DOOR OPENING TO BE CUT. YOUR DOOR MUST BE 3/4 INCH HIGHER THAN THE OPENING.

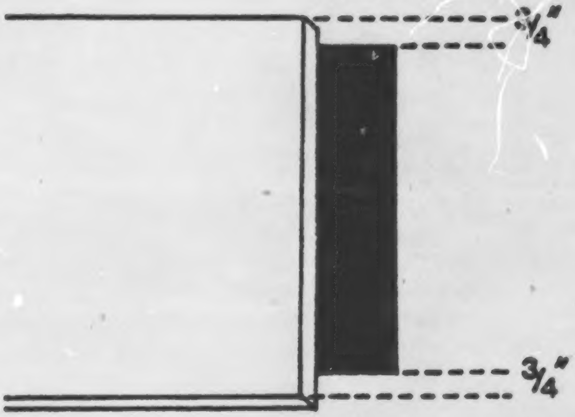
LOOK:



DO: MEASURE AND WRITE DOWN THE DOOR OPENING HEIGHT. ADD 3/4 INCH.

READ: 2. MEASURE DOOR OPENING WIDTH. YOUR DOOR MUST BE 3/4 INCH WIDER THAN THE OPENING.

LOOK:



DO: DO JOB STEP 2, THEN WRITE DOWN THE DOOR OPENING WIDTH. ADD 3/4 INCH.

CHECK: EXAMPLE: IF YOUR DOOR OPENING WAS 24 INCHES HIGH AND 36 INCHES WIDE, YOUR DOOR MUST BE 24 3/4 INCHES HIGH AND 36 3/4 INCHES WIDE. TAKE THE MEASUREMENTS OF YOUR DOOR TO YOUR INSTRUCTOR.

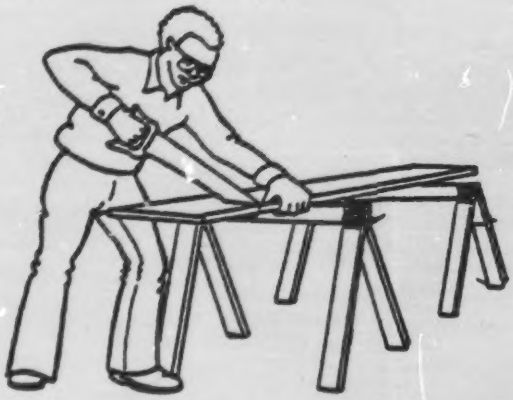
"TURN THE PAGE"

WORD GUIDE

ROUT - TO CUT A GROOVE IN WOOD.

READ: 3. CUT THE DOOR PIECE TO FIT YOUR MEASUREMENTS. WEAR SAFETY GLASSES.

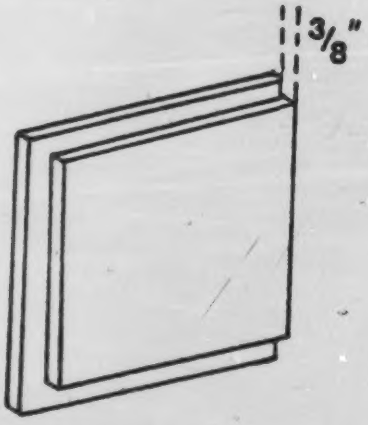
LOOK:



DO: IF YOUR INSTRUCTOR TELLS YOU TO, DO JOB STEP 3.

READ: 4. ROUT OUT 3/8 INCH DEEP AND 3/8 INCH WIDE ON ALL EDGES OF ONE SIDE OF THE DOOR PIECE.

LOOK:

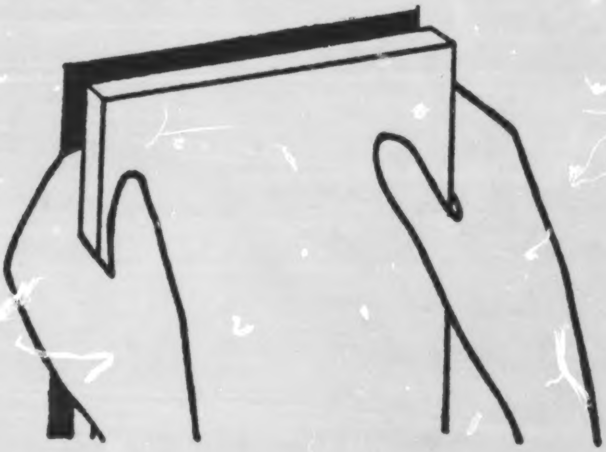


DO: DO JOB STEP 4 IF YOUR INSTRUCTOR TELLS YOU TO.

"TURN THE PAGE"

READ: 5. PUT THE DOOR IN THE OPENING TO SEE IF IT FITS.

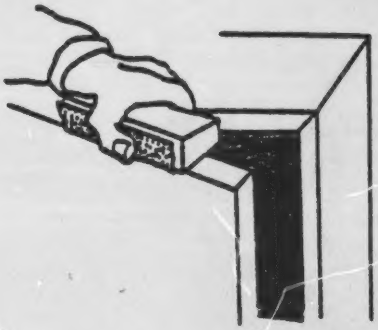
LOOK:



DO: DO JOB STEP 4 IF YOUR INSTRUCTOR TELLS YOU TO.

READ: 6. IF THE DOOR IS TOO BIG TO FIT IN EASILY, SAND THE EDGES TO MAKE DOOR FIT.

LOOK:



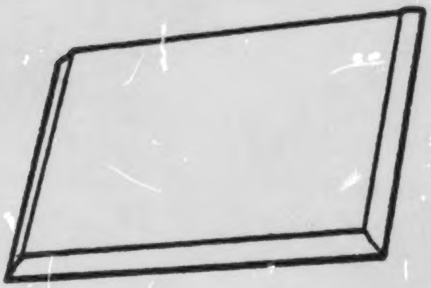
DO: DO JOB STEP 6.

CHECK: WHEN YOU HAVE MADE THE DOOR FIT, ASK YOUR INSTRUCTOR TO LOOK AT IT.

"TURN THE PAGE"

READ: 7. Use the router to trim the top, bottom, and one side of your door. Do not take too much off.

LOOK:

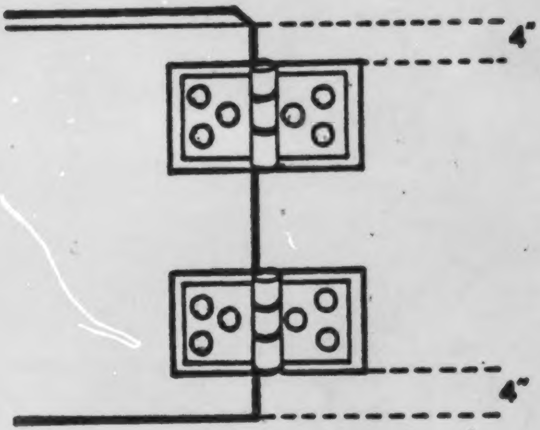


DO: Do job step 8, but be careful only to trim. Do not take off too much wood.

CHECK: Ask your instructor to check your work.

READ: 8. Put one hinge 4 inches down from the top on the side you did not rout.

LOOK:

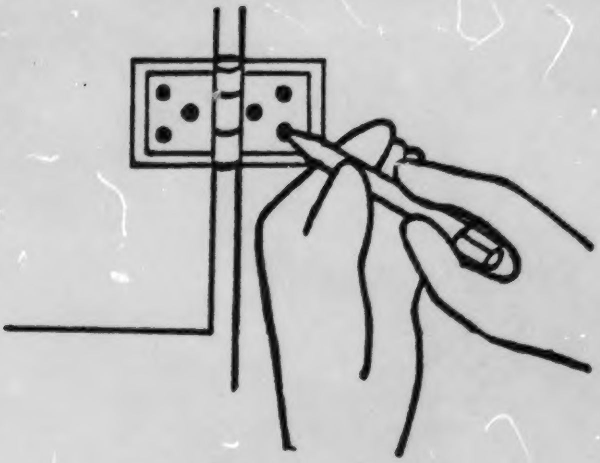


DO: Do job step 8.

"Turn The Page"

READ: 9. CENTER PUNCH HOLES IN THE CABINET TRIM.

LOOK:

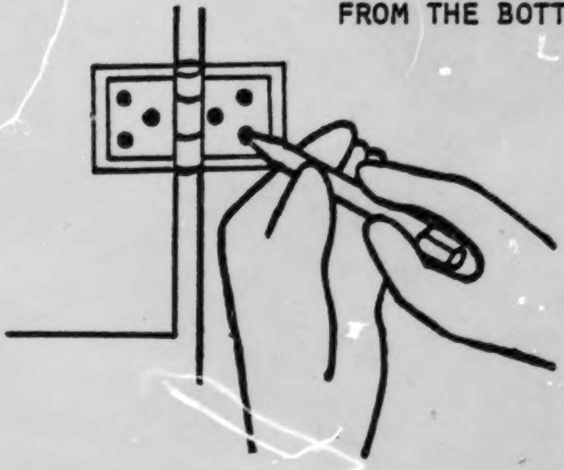


DO: DO JOB STEP 9.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 10. REPEAT JOB STEPS 9 AND 10, BUT PUT THE HINGE 4 INCHES UP FROM THE BOTTOM ON THE SAME SIDE.

LOOK:



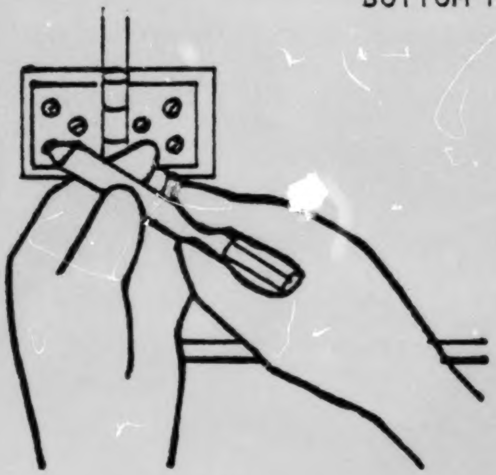
DO: DO JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

READ: 11. PUT SCREWS INTO CENTER PUNCHED HOLES FOR THE TOP AND BOTTOM HINGE.

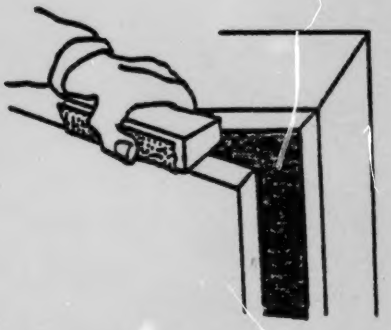
LOOK:



DO: DO JOB STEP 11.

READ: 12. SAND THE EDGES TO MAKE DOOR FIT.

LOOK:



DO: DO JOB STEP 12.

CHECK: SHOW YOUR FINISHED DOOR TO YOUR INSTRUCTOR.

READ: 13. CLEAN UP WORK AREA AND PUT AWAY ALL TOOLS.

DO: DO JOB STEP 13.

"TURN THE PAGE"

building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 005 1 date: 2/77 level: II

skill title: FABRICATE DOORS - FLUSH

developed & written by: MIKE POLEN

visuals by: GLEN COOLEY

WORD GUIDE

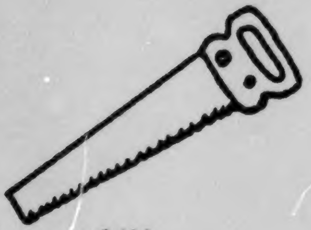
FLUSH DOORS - Doors that fit into the door opening, so that the front of the cabinet is all flat.

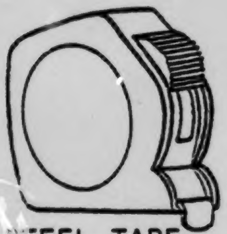
PERFORMANCE OBJECTIVE

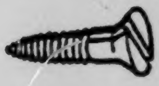
What You Will Learn:

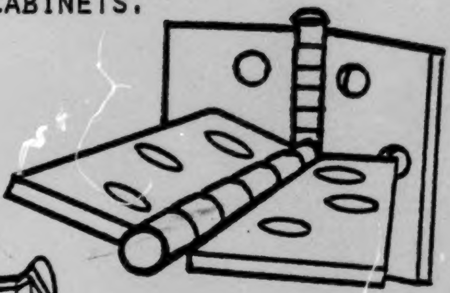
How to make flush doors for cabinets.

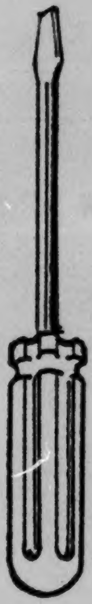
What You Will Need:


SAW


STEEL TAPE


SCREWS


HINGES


SCREWDRIVER

SAFETY GLASSES

What You Must Do:

1. Read the job steps.
2. Do the tasks.
3. Cut flush doors to fit your cabinets.
4. Put the doors on so that they won't stick when opening.

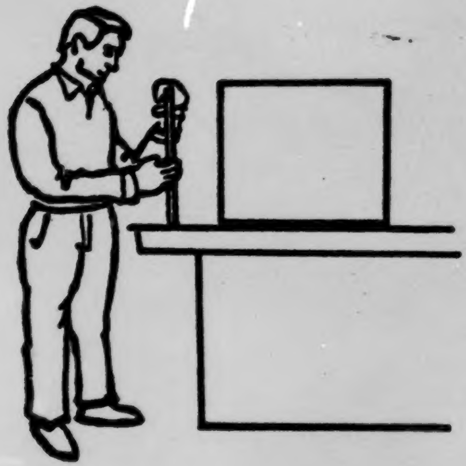
"Turn The Page"

JOB STEPS

READ: CAUTION: BE SURE THAT YOU HAVE DONE THE MODULES ON USING SAWS, 2201 20 004 1 AND 2201 20 005 1.

READ: 1. MEASURE THE DOOR OPENING OF YOUR CABINET. FIRST MEASURE THE HEIGHT AND WRITE DOWN HOW HIGH THE OPENING IS.

LOOK:

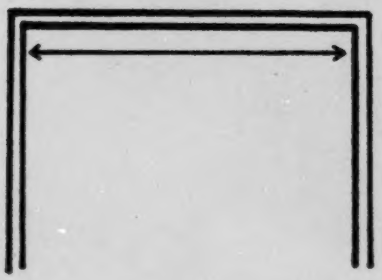


DO: DO JOB STEP 1.

"TURN THE PAGE"

READ: 2. MEASURE THE WIDTH OF THE DOOR OPENING. WRITE DOWN THE WIDTH AND TAKE AWAY 1/16 INCH.

LOOK:

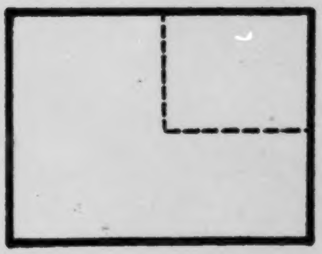


DO: DO JOB STEP 2. THE 1/16 INCH THAT YOU TAKE AWAY IS TO HELP THE DOOR OPEN AND CLOSE.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 3. MEASURE THE DOOR HEIGHT AND WIDTH ON A PIECE OF PLYWOOD AND DRAW LINES.

LOOK:

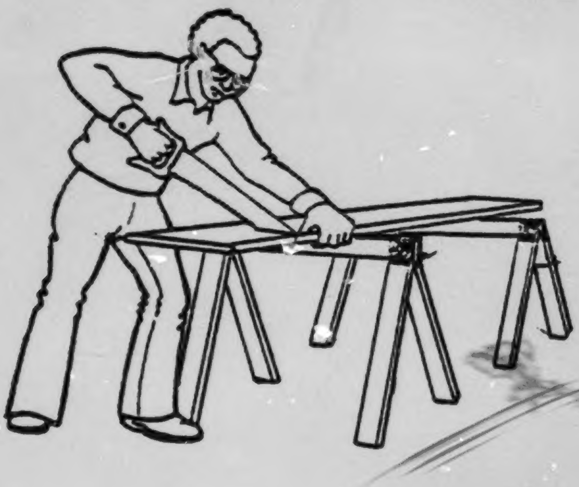


DO: DO JOB STEP 3.

"TURN THE PAGE"

READ: 4. CUT OUT THE DOOR. WEAR SAFETY GLASSES.

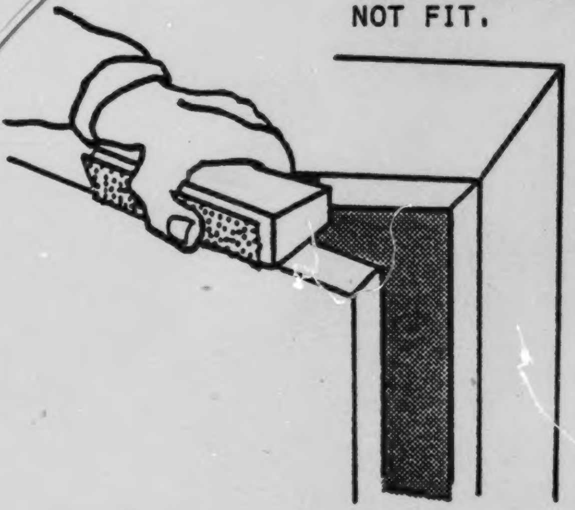
LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 4.

READ: 5. PUT DOOR IN THE OPENING. SAND DOWN THE EDGES IF IT DOES NOT FIT.

LOOK:

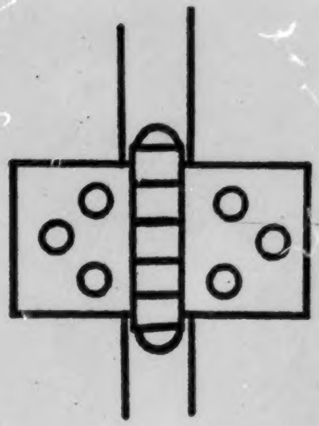


DO: DO JOB STEP 5.

"TURN THE PAGE"

READ: 6. Place hinges on door so that hinge pin is in the middle of the crack between the door and the trim.

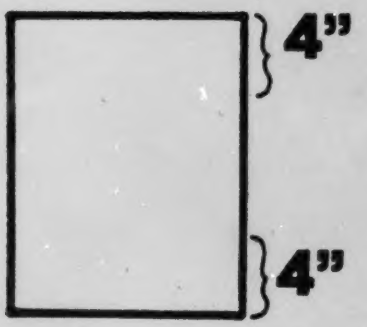
LOOK:



DO: Do job step 6.

READ: 7. Slide hinges so that one is 4 inches from the top and the other is 4 inches from the bottom.

LOOK:



DO: Do job step 7.

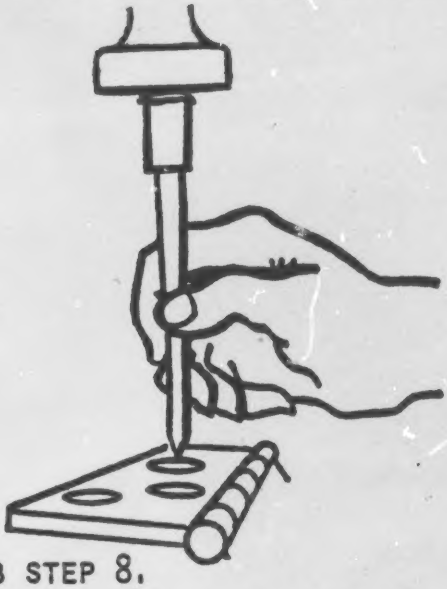
"Turn The Page"

WORD GUIDE

CENTER PUNCH - TO MAKE A LITTLE HOLE WHERE YOU WANT TO DRILL.

READ: 8. CENTER PUNCH THE SCREW HOLES.

LOOK:

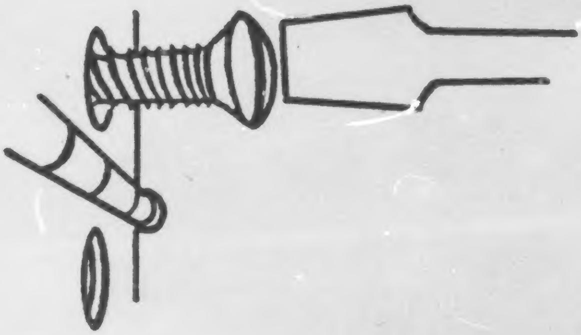


DO: DO JOB STEP 8.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

READ: 9. PUT SCREWS IN DOOR.

LOOK:

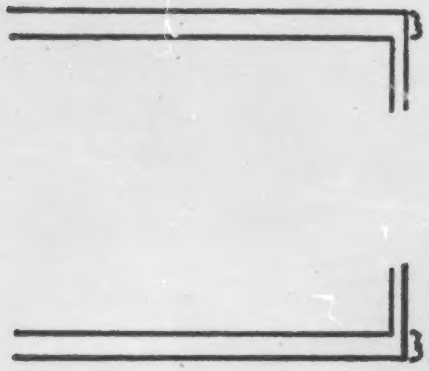


DO: DO JOB STEP 9.

"TURN THE PAGE"

READ: 10. PLACE DOOR IN OPENING SO THAT TOP AND BOTTOM EDGES ARE THE SAME DISTANCE FROM THE TRIM EDGES.

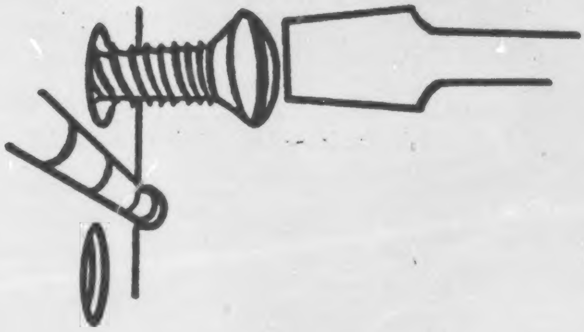
LOOK:



DO: DO JOB STEP 10.

READ: 11. CENTER PUNCH SCREW HOLES IN CABINET TRIM AND PUT IN SCREWS.

LOOK:

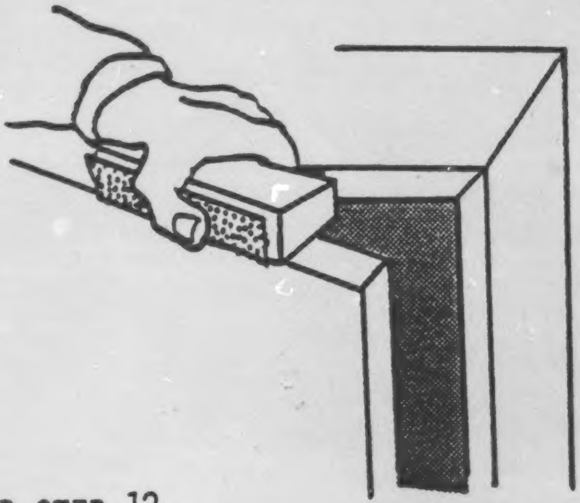


DO: BE SURE HINGE PIN IS AGAINST THE TRIM EDGE, THEN DO JOB STEP 11.

"TURN THE PAGE"

READ: 12. OPEN AND CLOSE DOOR. IF IT STICKS, SAND THE INSIDE EDGE UNTIL IT CLOSES WITHOUT STICKING.

LOOK:

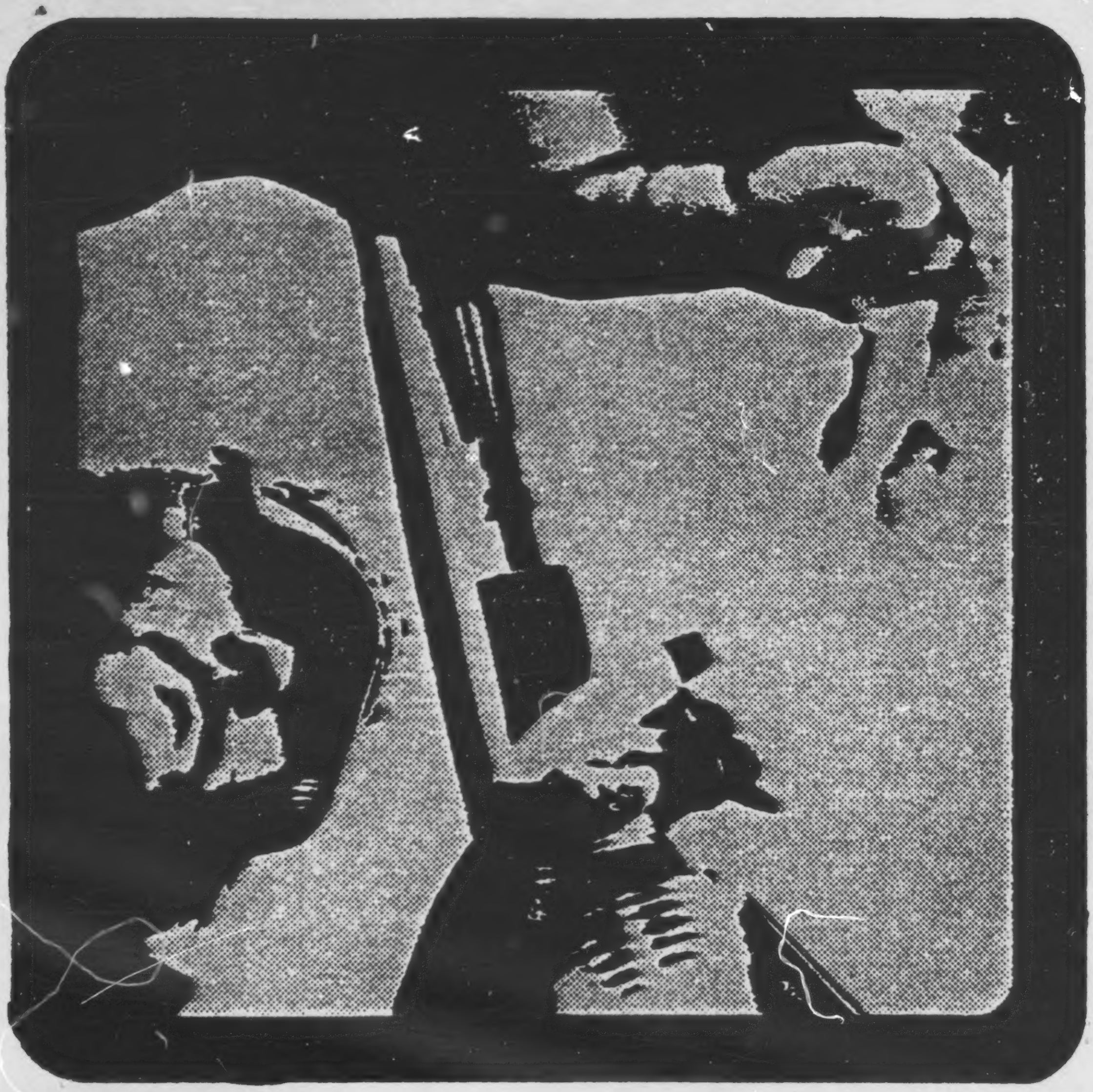


DO: DO JOB STEP 12.

CHECK: SHOW YOUR WORK TO YOUR INSTRUCTOR.

READ: 13. CLEAN UP AREA AND PUT AWAY ALL TOOLS.

DO: DO JOB STEP 13.



building maintenance & engineering

unit: CONSTRUCT CABINETS

capital area career center

module: 2201 21 006 1 **date:** 2/77 **level:** II

skill title: FABRICATE DRAWERS

developed & written by: MIKE POLEN

visuals by: MARIE GOUGEON

WORD GUIDE

SQUARE - STRAIGHT AND EVEN.

PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

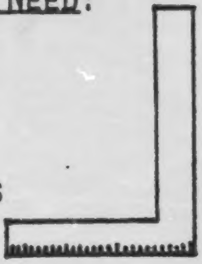
HOW TO MAKE DRAWERS FOR A CABINET.

WHAT YOU WILL NEED:

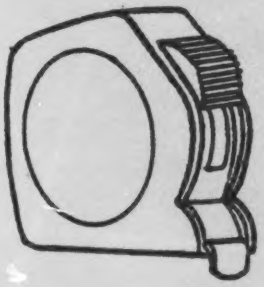
SAFETY GLASSES

PLYWOOD

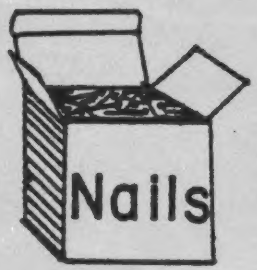
GLUE



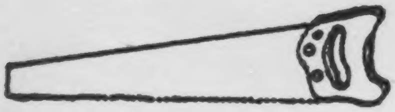
CARPENTER'S SQUARE



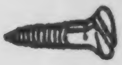
STEEL TAPE



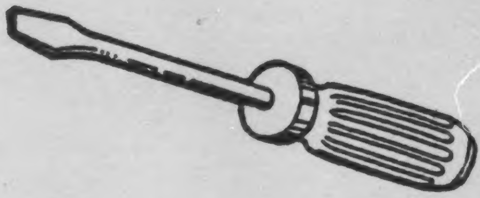
NAILS



SAW



SCREWS



SCREWDRIVER

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS.
3. MAKE A DRAWER THAT IS SQUARE.
4. MAKE A DRAWER THAT DOES NOT STICK WHEN OPENED.

"TURN THE PAGE"

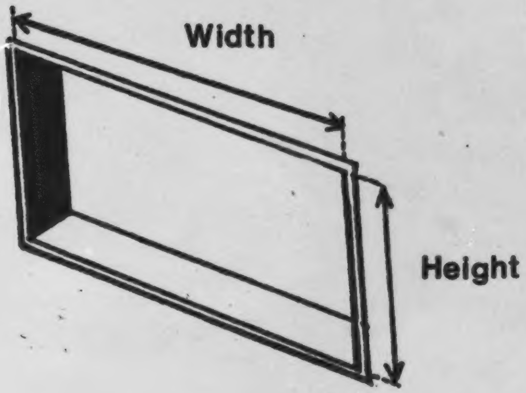
JOB STEPS

READ: CAUTION! BE SURE THAT YOU HAVE DONE ALL THE MODULES ON USING SAWS, 2201 20 004 1 AND 2201 005 1.

CHECK: ASK YOUR INSTRUCTOR IF YOU MAY DO THIS MODULE.

READ: 1. MEASURE YOUR DRAWER OPENING, AND WRITE DOWN THE HEIGHT AND WIDTH.

LOOK:

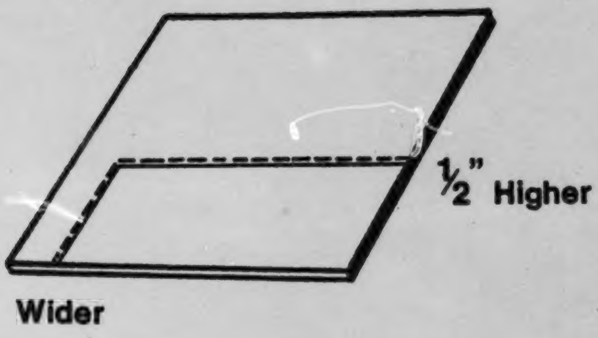


DO: DO JOB STEP 1.

"TURN THE PAGE"

READ: 2. MEASURE THE DRAWER FACE ON A PIECE OF 3/4 INCH PLYWOOD. MAKE THE DRAWER 1/2 INCH HIGHER AND WIDER THAN THE DRAWER OPENING.

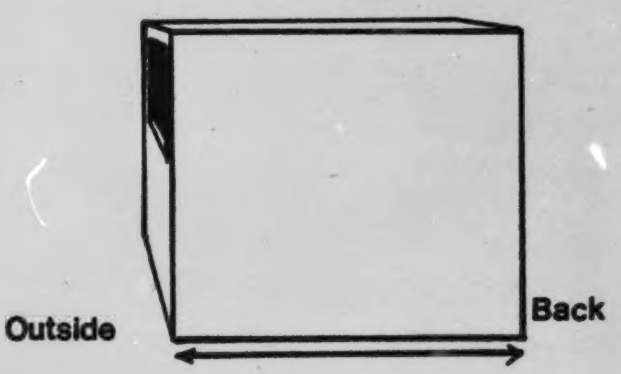
LOOK:



DO: DO JOB STEP 2.

READ: 3. NOW MEASURE FOR THE DRAWER SIDES. THE SIDES MUST BE AS LONG (DEEP) AS THE DRAWER, SO MEASURE FROM THE OUTSIDE EDGE OF THE CABINET TO THE BACK OF THE CABINET.

LOOK:

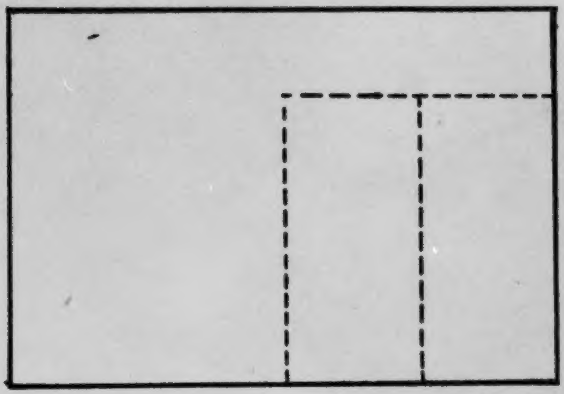


DO: DO JOB STEP 3.

"TURN THE PAGE"

READ: 4. MEASURE THE SIDE ON A PIECE OF 5/8 INCH PLYWOOD. DRAW BOTH SIDE PIECES.

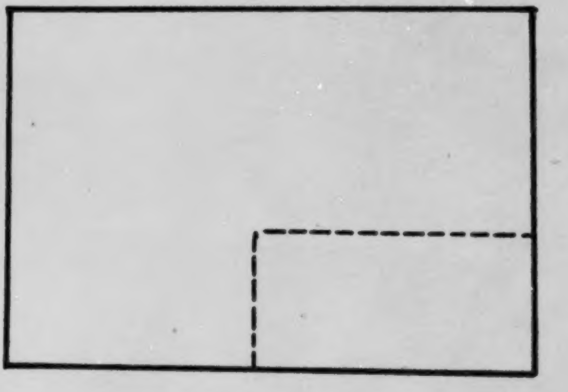
LOOK:



DO: DO JOB STEP 4.

READ: 5. USING THE MEASUREMENTS FOR JOB STEP 1, DRAW THE BACK PIECE ON A PIECE OF 5/8 INCH PLYWOOD.

LOOK:



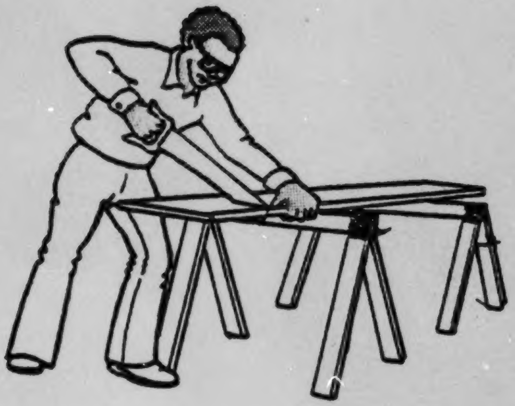
DO: DO JOB STEP 5.

CHECK: ASK YOUR INSTRUCTOR TO LOOK AT ALL THE DRAWINGS AND MEASUREMENTS.

"TURN THE PAGE"

READ: 6. FOLLOWING ALL SAFETY RULES, CUT OUT ALL THE PIECES YOU HAVE DRAWN. WEAR SAFETY GLASSES.

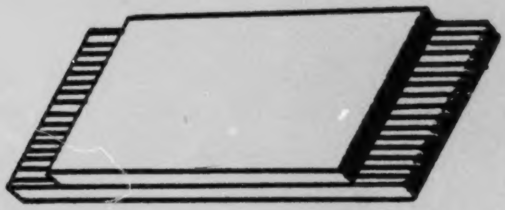
LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 6.

READ: 7. WITH ROUTER, ROUT OUT 5/8 INCH WIDE AND 3/8 INCH DEEP ON BOTH SIDES OF THE DRAWER FACE.

LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 7.

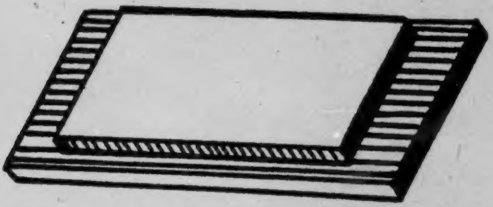
"TURN THE PAGE"

WORD GUIDE

GROOVE - A LONG, NARROW CHANNEL.

READ: 8. WITH ROUTER, ROUT OUT 1/4 INCH ON THE TOP AND BOTTOM OF THE DRAWER FACE. BE SURE YOU ARE ROUTING ON THE SAME SIDE AS YOU DID IN JOB STEP 7.

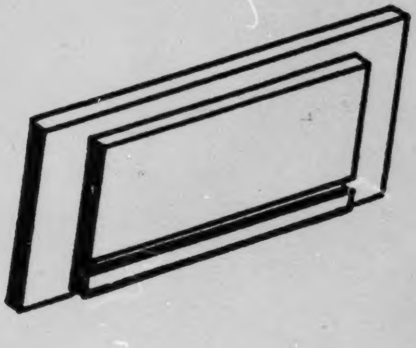
LOOK:



DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 8.

READ: 9. CUT OUT A 1/4 INCH GROOVE THAT IS 3/4 INCH UP ON THE DRAWER FACE. BE SURE YOU CUT OUT THE SAME SIDE AS YOU DID IN JOB STEPS 7 AND 8.

LOOK:

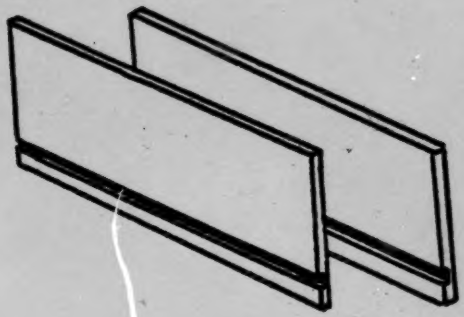


DO: IF YOUR INSTRUCTOR IS WATCHING YOU, DO JOB STEP 9.

"TURN THE PAGE"

READ: 10. Cut out a 1/4 inch groove on both side pieces, 1/2 inch up from the bottom.

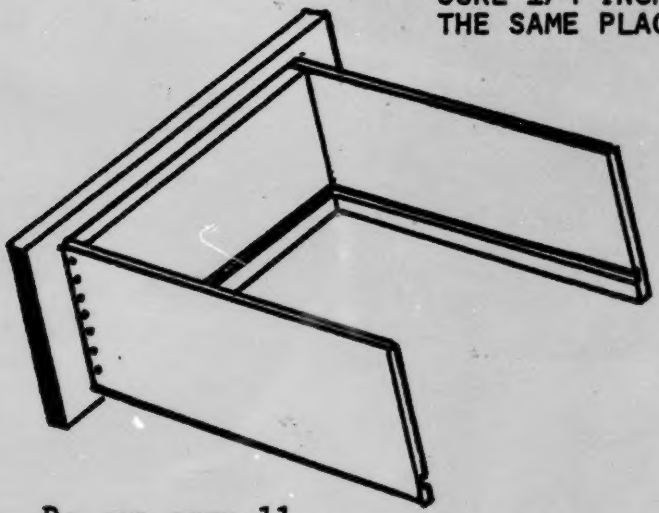
LOOK:



DO: If your instructor is watching you, do job step 10.

READ: 11. Glue and nail the sides to the back of the face piece. Be sure 1/4 inch grooves all are in the same place.

LOOK:



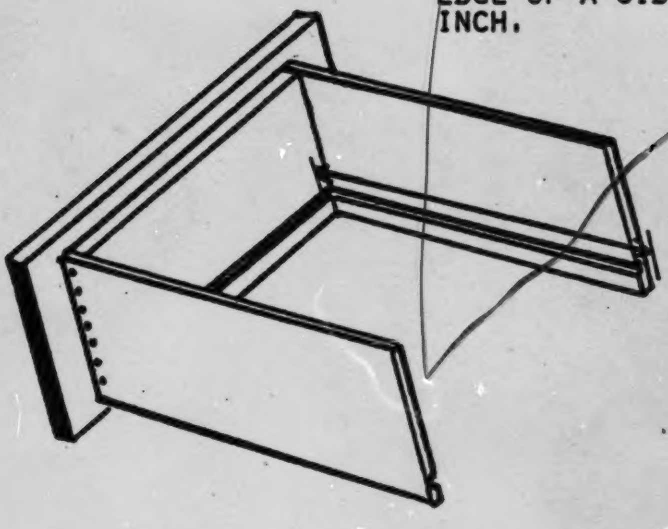
DO: Do job step 11.

CHECK: Ask your instructor to check your work.

"Turn The Page"

READ: 12. Measure from the inside of the 1/4 inch groove to the back edge of a side piece. Add 1/4 inch.

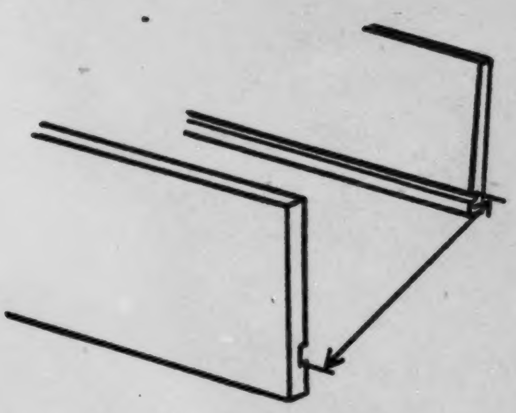
LOOK:



DO: Do job step 12.

READ: 13. Measure between the inside of the 1/4 inch grooves of each side.

LOOK:

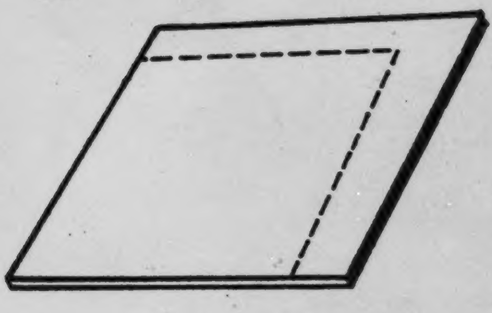


DO: Do job step 13.

"Turn The Page"

READ: 14. Using the measurements from steps 12 and 13, draw the drawer bottom on a 1/4 inch piece of plywood.

LOOK:

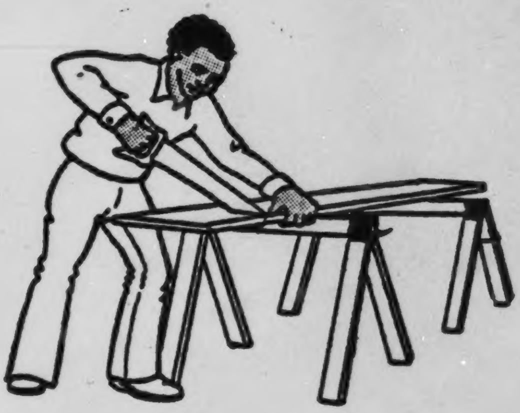


DO: Do job step 14.

CHECK: Ask your instructor to check your work.

READ: 15. Cut the drawer piece.

LOOK:

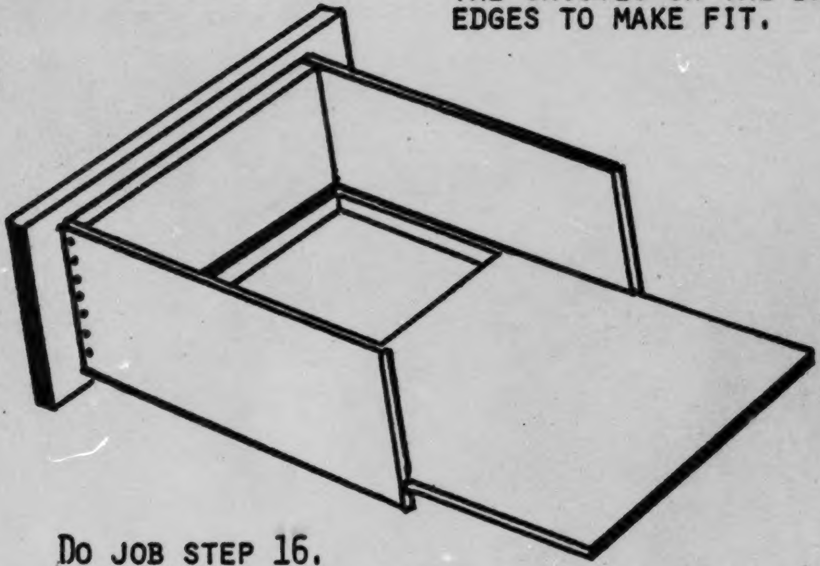


DO: If your instructor is watching you, do job step 15.

"Turn The Page"

READ: 16. SLIDE THE DRAWER PIECE INTO THE GROOVES ON THE DRAWER. SAND EDGES TO MAKE FIT.

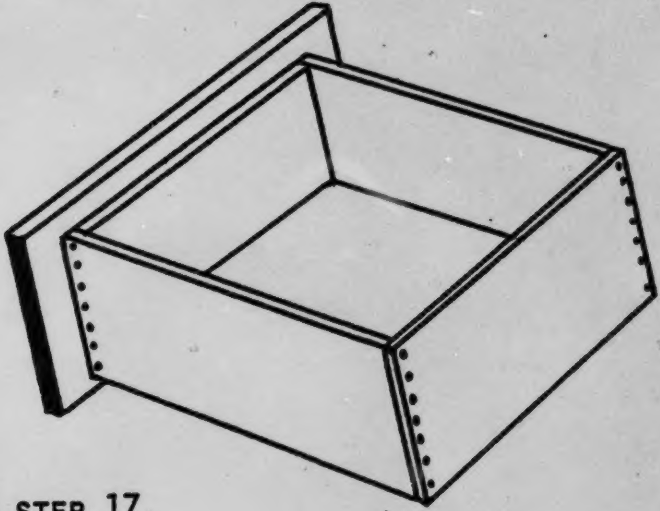
LOOK:



DO: Do JOB STEP 16.

READ: 17. PUT BACK PIECE ON. GLUE AND NAIL.

LOOK:



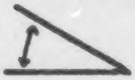
DO: Do JOB STEP 17.

"TURN THE PAGE"

WORD GUIDE

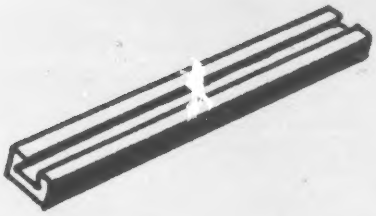
DRAWER GUIDE PIECE - A long narrow channel which keeps the drawer on track.

ANGLE CUT 30° -



READ: 18. Cut drawer guide piece.
Angle cut 30° and 1/2 inch deep.

LOOK:



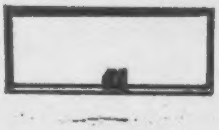
DO: If your instructor is helping you, do job step 18.

"Turn the page"

WORD GUIDE

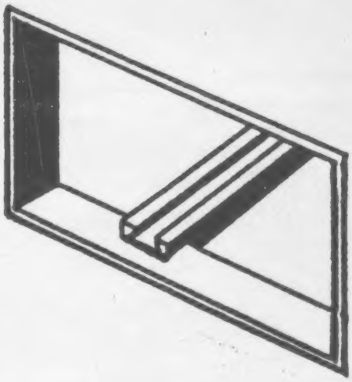
GROOVE TRACK - BOTTOM OF DRAWER GUIDE PIECE.

TRIM NOTCH -



READ: 19. PUT DRAWER GUIDE BETWEEN TRIM NOTCH AND BACK OF CABINET. GLUE AND NAIL.

LOOK:



DO: ASK YOUR INSTRUCTOR TO HELP YOU DO JOB STEP 19.

CHECK: BE SURE BOTTOM OF GROOVE TRACK IS LEVEL WITH BOTTOM OF TRIM.

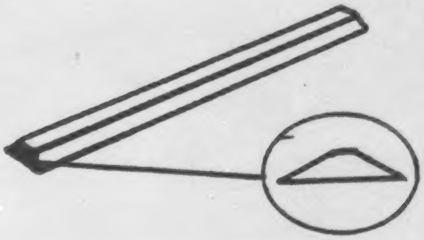
"TURN THE PAGE"

WORD GUIDE

DRAWER GUIDE STRIP - PIECE ON BOTTOM OF DRAWER WHICH FITS INTO DRAWER GUIDE PIECE.

READ: 20. CUT GUIDE STRIP AT 30° ANGLE AND 1/2 INCH THICK.

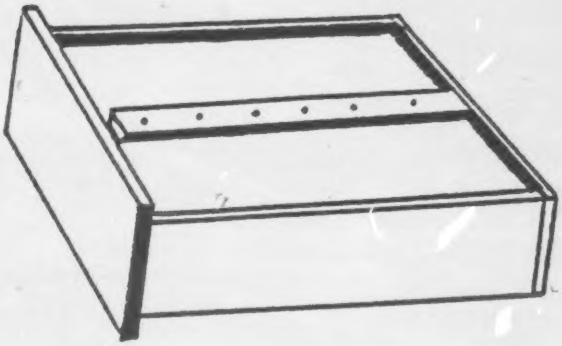
LOOK:

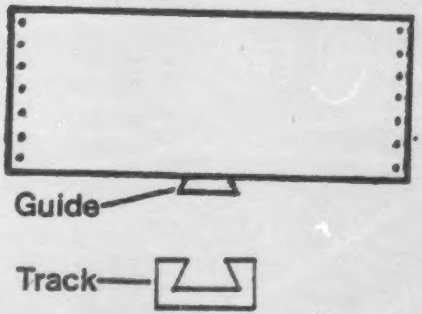


DO: ASK YOUR INSTRUCTOR TO HELP YOU DO JOB STEP 20.

READ: 21. GLUE AND NAIL GUIDE STRIP TO DRAWER BOTTOM. BE SURE IT IS IN LINE WITH GUIDE TRACK.

LOOK:

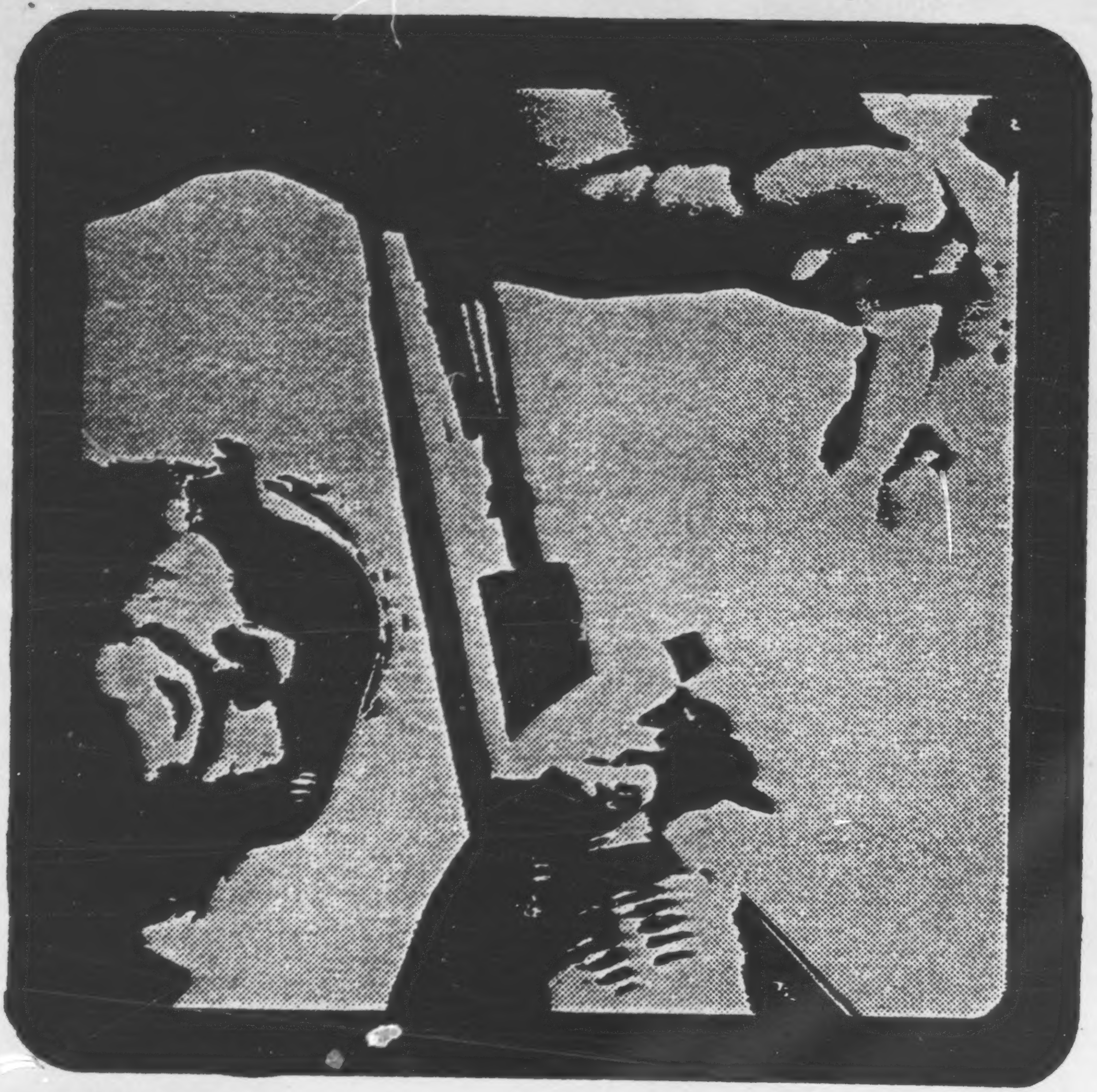




DO: ASK YOUR INSTRUCTOR TO HELP YOU DO JOB STEP 21.

READ: 22. CLEAN UP WORK AREA AND PUT AWAY ALL TOOLS.

DO: DO JOB STEP 22.



building maintenance & engineering

unit: Cabinet Construction

capital area career center

module: 2201 21 007 1 date: 2/77 level: II

skill title: Cabinet Finishing

developed & written by: Mike Polen

visuals by: Glen Cooley

WORD GUIDE

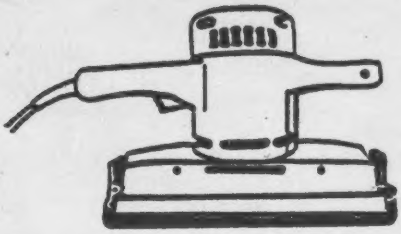
FINISH - SAND AND USE PAINT OR VARNISH.

PERFORMANCE OBJECTIVE

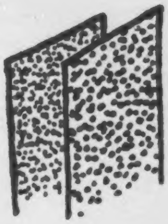
WHAT YOU WILL LEARN:

HOW TO FINISH A CABINET.

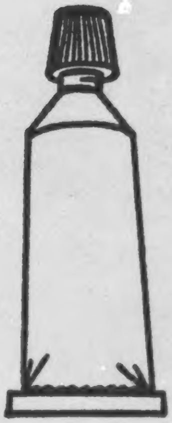
WHAT YOU WILL NEED:



POWER SANDER



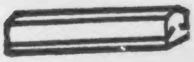
FINE & MEDIUM GRIT SANDPAPER



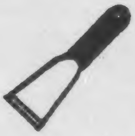
FILLER

CLEAN RAG

PAINT THINNER



SANDING BLOCK



PUTTY KNIFE

STAIN OR URETHANE

SAFETY GLASSES

WHAT YOU MUST DO:

1. READ THE JOB STEPS.
2. DO THE TASKS.
3. FINISH THE CABINET SO IT IS SMOOTH.

"TURN THE PAGE"

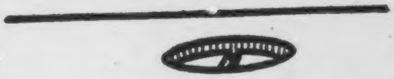
WORD GUIDE

COUNTERSINK - PUT THE HEAD OF THE SCREW BELOW THE SURFACE OF THE WOOD.

JOB STEPS

READ: 1. COUNTERSINK ALL NAILS AND SCREWS TO 1/16 INCH BELOW SURFACE OF WOOD.

LOOK:



DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

READ: 2. Fill all nail and screw holes and deep scratches with plastic wood filler. Smooth to level with wood surface.

LOOK:

DO: Do job step 2.

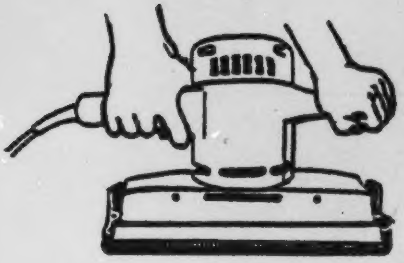
CHECK: Ask your instructor to check your work, then let the filler dry.

"Turn The Page"

JOB STEPS

READ: 3. USE POWER SANDER WITH MEDIUM GRIT SANDPAPER AND SAND SURFACE. WEAR SAFETY GLASSES.

LOOK:



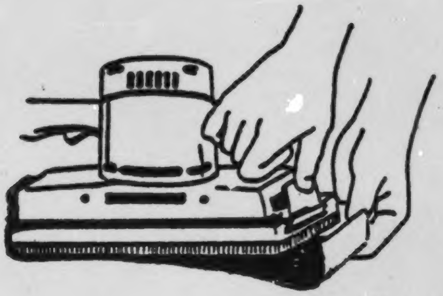
DO: DO JOB STEP 3.

"TURN THE PAGE"

JOB STEPS

READ: 4. CHANGE TO FINE GRIT SANDPAPER AND SAND AGAIN.

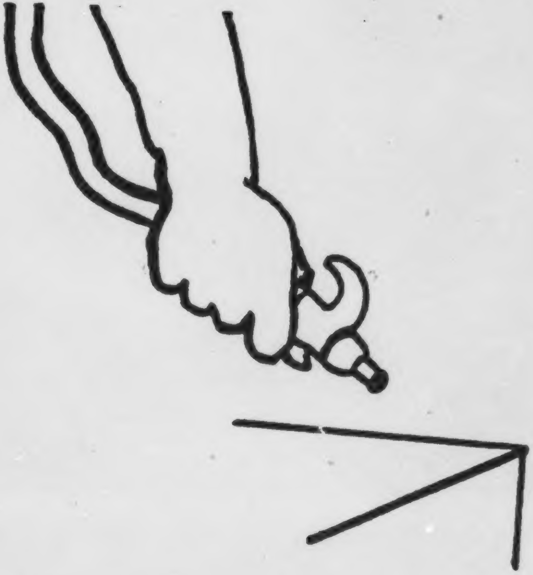
LOOK:



DO: DO JOB STEP 4, THEN WIPE OFF DIRT.

READ: 5. WHEN SURFACE IS SMOOTH, BLOW OFF ALL DUST WITH AN AIR HOSE.

LOOK:



DO: DO JOB STEP 5.

"TURN THE PAGE"

WORD GUIDE

PAINT THINNER - USED HERE TO GET ALL THE DUST OFF THE WOOD SO THAT THE STAIN OR VARNISH WILL STICK.

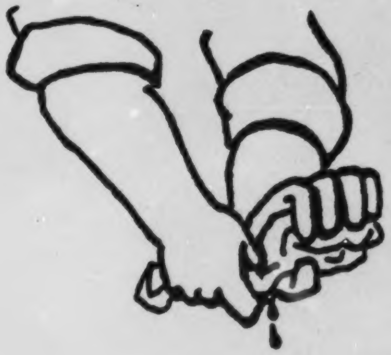
JOB STEPS

READ: 6. MOVE THE CABINET TO THE PAINT AREA.

DO: DO JOB STEP 6.

READ: 7. PUT PAINT THINNER ON A CLEAN RAG. WRING OUT THE RAG UNTIL IT WILL NOT DRIP.

LOOK:



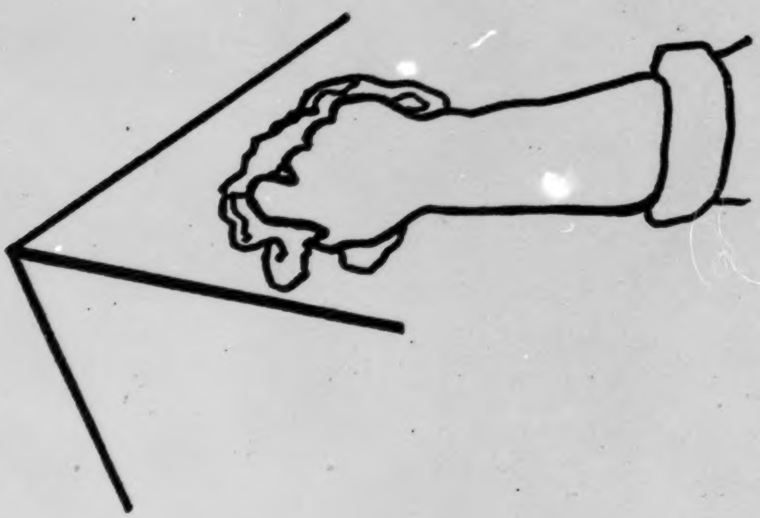
DO: DO JOB STEP 7.

"TURN THE PAGE"

JOB STEPS

READ: 8. WIPE THE SURFACE OF THE CABINET WITH THE DAMP RAG.

LOOK:



DO: DO JOB STEP 8 UNTIL DUST IS GONE.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

IF YOU DO NOT WANT TO STAIN THE CABINET, GO TO JOB STEP 10.

IF YOU WANT TO STAIN CABINET, DO NEXT JOB STEP.

"TURN THE PAGE"

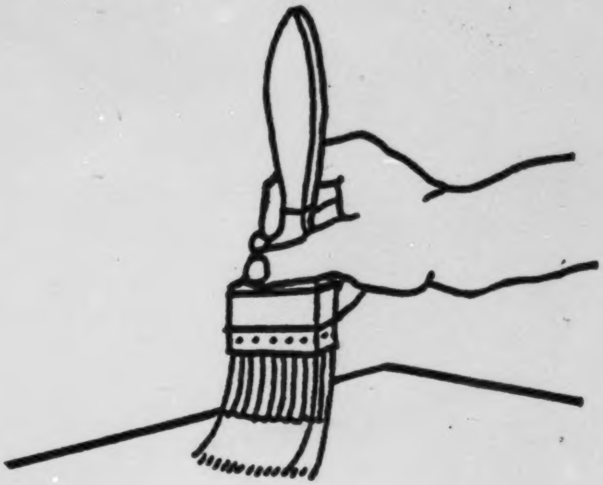
JOB STEPS

READ: 9. STAIN THE CABINET. FOLLOW THE DIRECTIONS ON STAIN CAN.

DO: DO JOB STEP 9. LET THE STAIN DRY.

READ: 10. BRUSH ON A COAT OF URETHANE VARNISH. FOLLOW THE DIRECTIONS ON THE URETHANE CAN.

LOOK:



DO: ASK YOUR INSTRUCTOR TO HELP YOU DO JOB STEP 10.

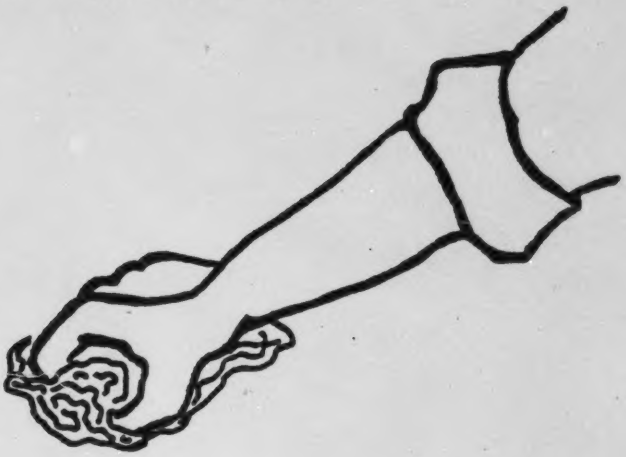
"TURN THE PAGE"

JOB STEPS

READ: 11. LET URETHANE DRY.

READ: 12. IF FINISH IS ROUGH, RUB THE SURFACE LIGHTLY WITH FINE STEEL WOOL.

LOOK:



DO: DO JOB STEP 12.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

JOB STEPS

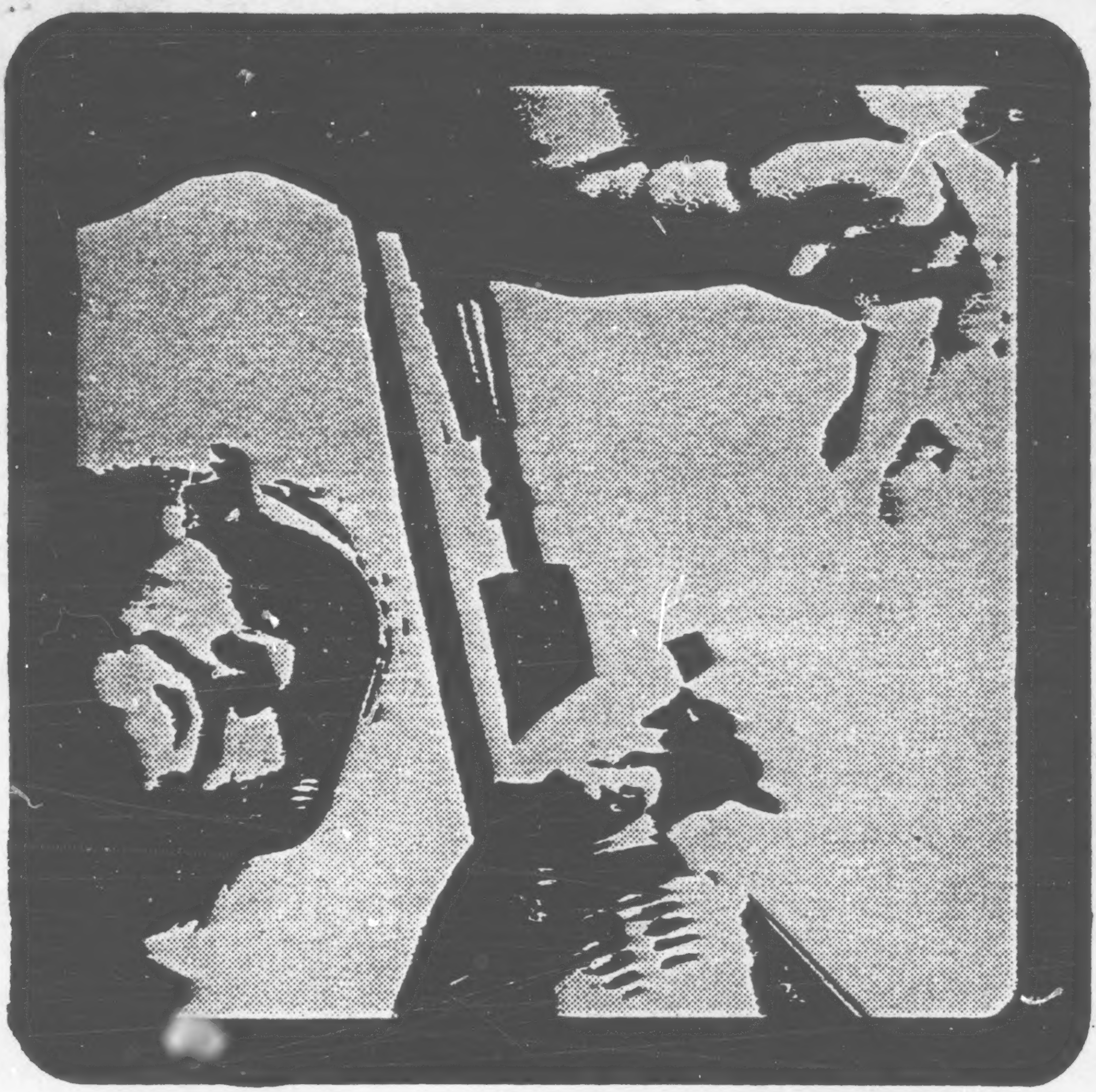
READ: 13. BRUSH ON SECOND COAT OF URETHANE.

DO: DO JOB STEP 13.

CHECK: WHEN DRY, ASK YOUR INSTRUCTOR TO CHECK YOUR FINISH.

READ 14. CLEAN ALL EQUIPMENT AND PUT AWAY.

DO: DO JOB STEP 14.



building maintenance & engineering

unit: REPAIR DAMAGED FURNITURE

capital area career center

module: 2201 22 002 1 **date:** 2/77 **level:** II

skill title: REPAIR WOOD CRACKS

developed & written by: ROY HASKE

visuals by: CHUCK KNOCK

WORD GUIDE

WHITE GLUE - A GLUE THAT DRIES CLEAR.

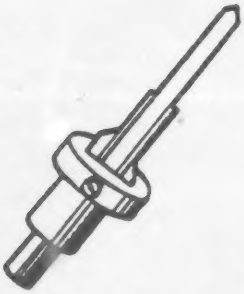
PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

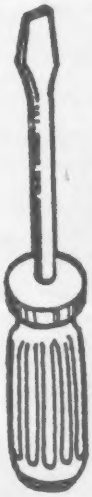
HOW TO REPAIR FURNITURE THAT IS CRACKED.

AND IN ORDER TO DO THIS YOU WILL NEED:

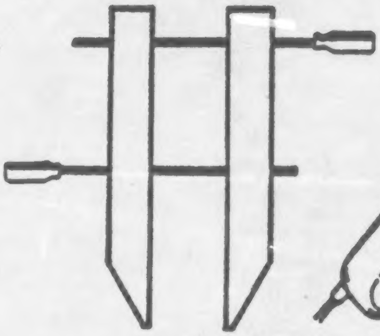
WHITE GLUE
SCREWS
PLASTIC WOOD



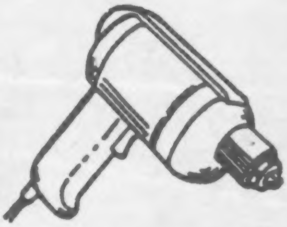
SCREWMATE



SCREWDRIVER



WOOD CLAMP

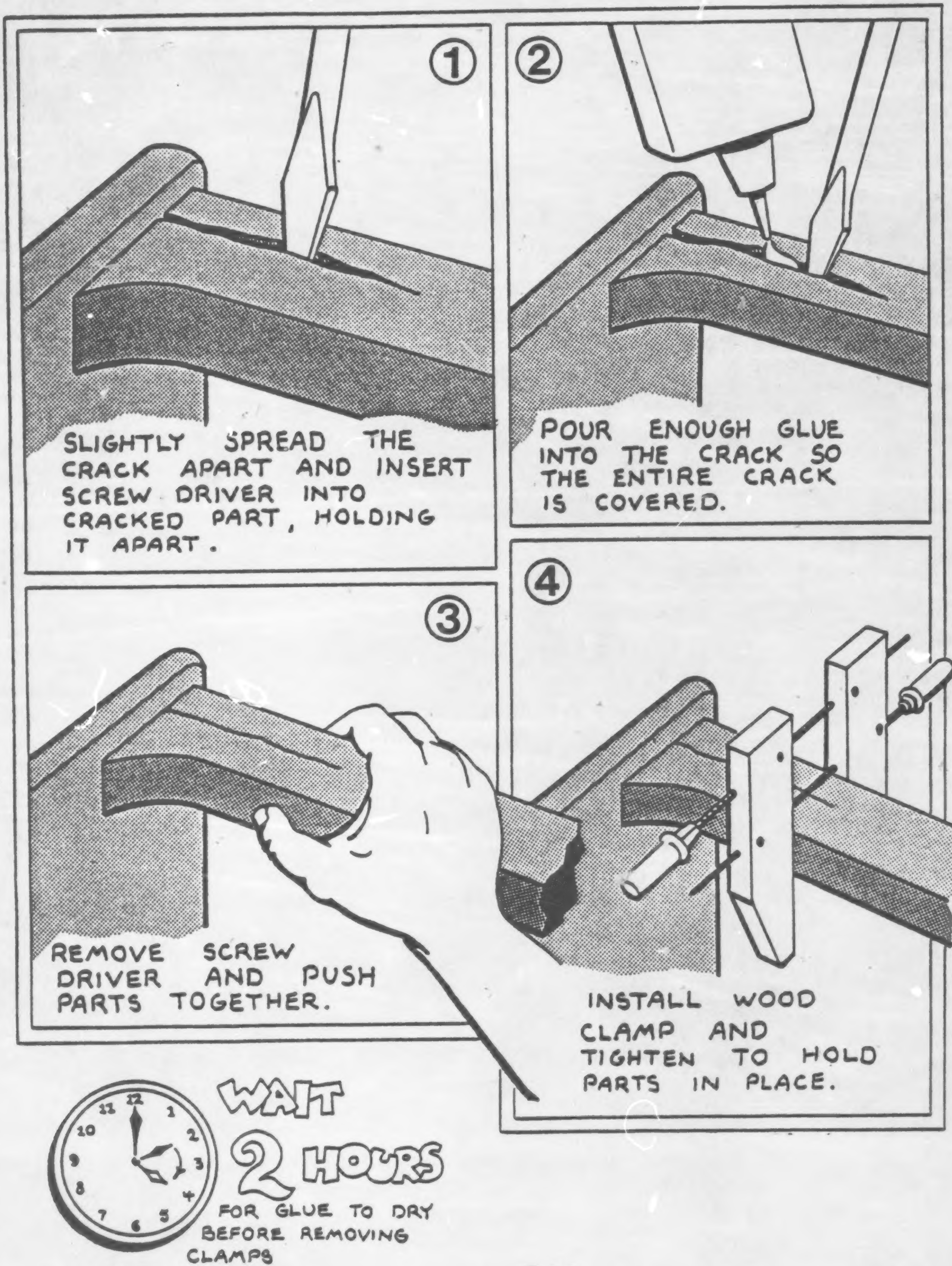


DRILL

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE GLUED THE CRACK, SCREWED THE CRACK CLOSED, AND FILLED SCREW HOLES WITH PLASTIC WOOD SO THAT THE REPAIRED AREA IS AS STRONG AS BEFORE THE WOOD CRACK.

"TURN THE PAGE"



① SLIGHTLY SPREAD THE CRACK APART AND INSERT SCREW DRIVER INTO CRACKED PART, HOLDING IT APART.

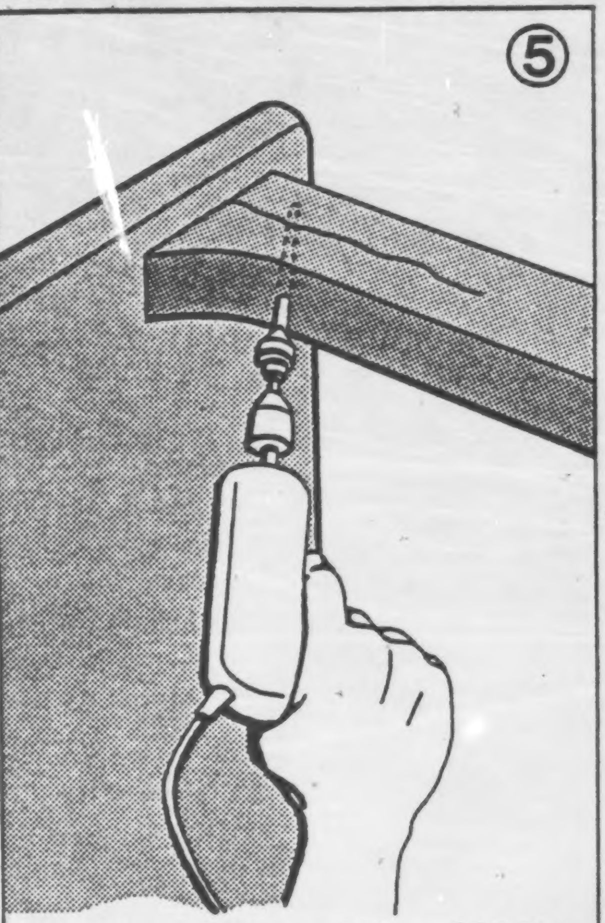
② POUR ENOUGH GLUE INTO THE CRACK SO THE ENTIRE CRACK IS COVERED.

③ REMOVE SCREW DRIVER AND PUSH PARTS TOGETHER.

④ INSTALL WOOD CLAMP AND TIGHTEN TO HOLD PARTS IN PLACE.

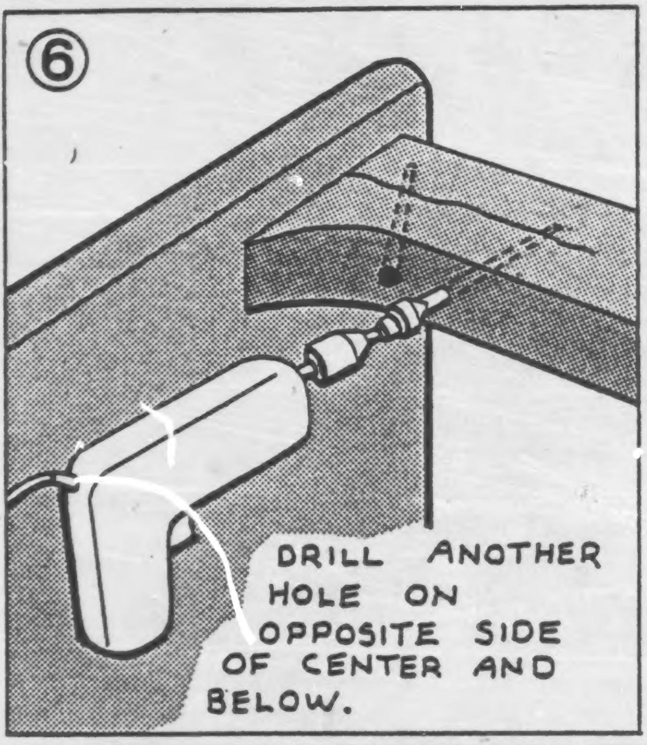
WAIT 2 HOURS FOR GLUE TO DRY BEFORE REMOVING CLAMPS

⑤



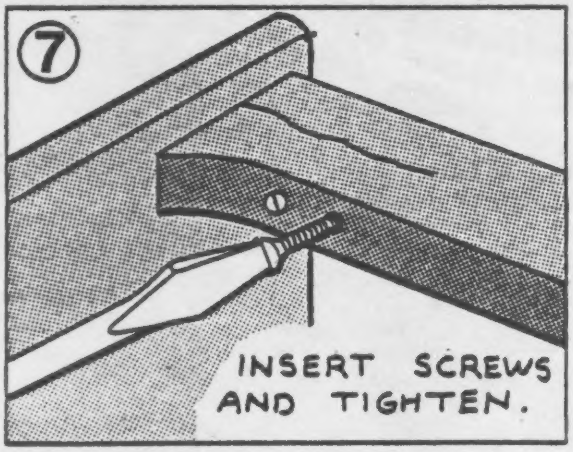
USING DRILL AND SCREWMATE, DRILL INTO THE THICK PART OF THE CRACK OFF CENTER TO RIGHT OR LEFT.

⑥



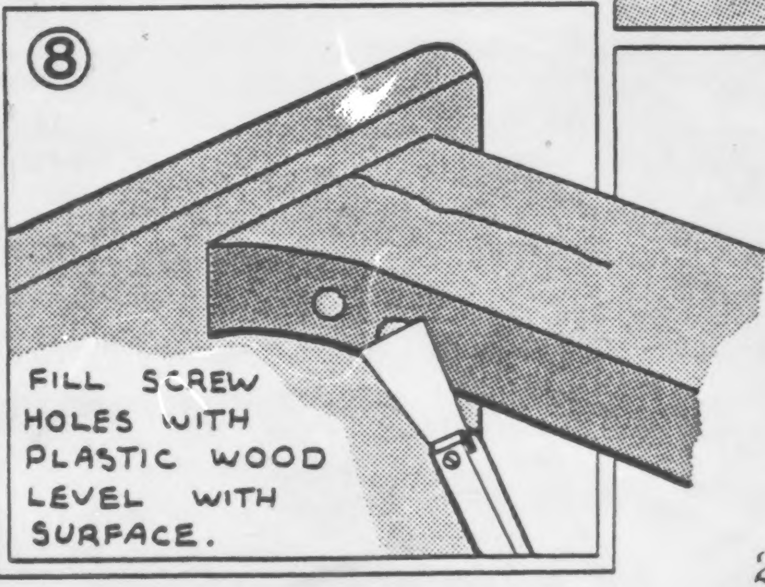
DRILL ANOTHER HOLE ON OPPOSITE SIDE OF CENTER AND BELOW.

⑦

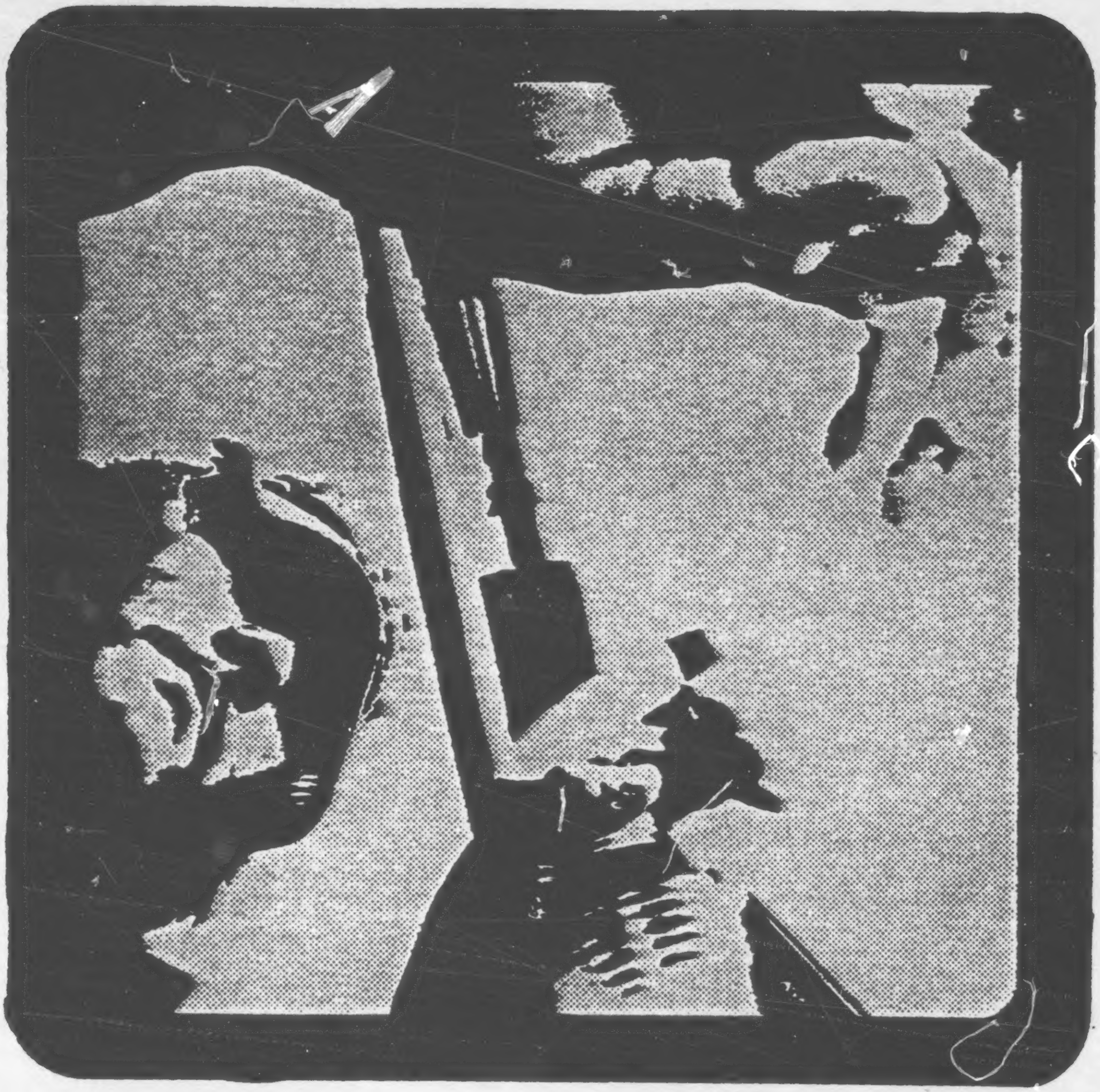


INSERT SCREWS AND TIGHTEN.

⑧



FILL SCREW HOLES WITH PLASTIC WOOD LEVEL WITH SURFACE.



building maintenance & engineering

unit: Repair Damaged Furniture

capital area career center

module: 2201 22 003 1 date: 5/77 level:

skill title: Fasten Wood with Dowel-Pins

developed & written by: Deborah J. White

visuals by: Sandra Starnaman

WORD GUIDE

WHITE GLUE - A GLUE THAT DRIES CLEAR.

DOWEL PINS - PIECES OF ROUND WOOD.

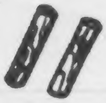
"C" CLAMP - A CLAMP SHAPED LIKE THE LETTER "C": USED TO HOLD THINGS TOGETHER.

PERFORMANCE OBJECTIVE

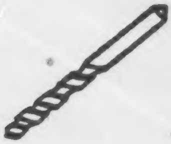
WHAT YOU WILL LEARN:

HOW TO FASTEN WOOD TOGETHER WITH DOWEL-PINS.

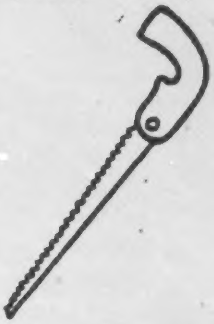
WHAT YOU WILL NEED:



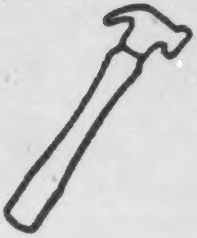
DOWEL-PIN STOCK



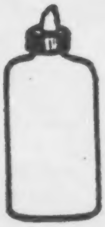
DRILL BIT



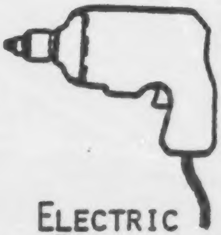
FINE-TOOTH SAW



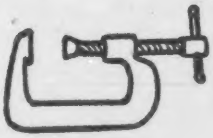
HAMMER



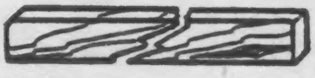
WHITE GLUE



ELECTRIC DRILL



METAL "C" CLAMP



BROKEN WOOD PIECES (MUST FIT TOGETHER)

WHAT YOU MUST DO:

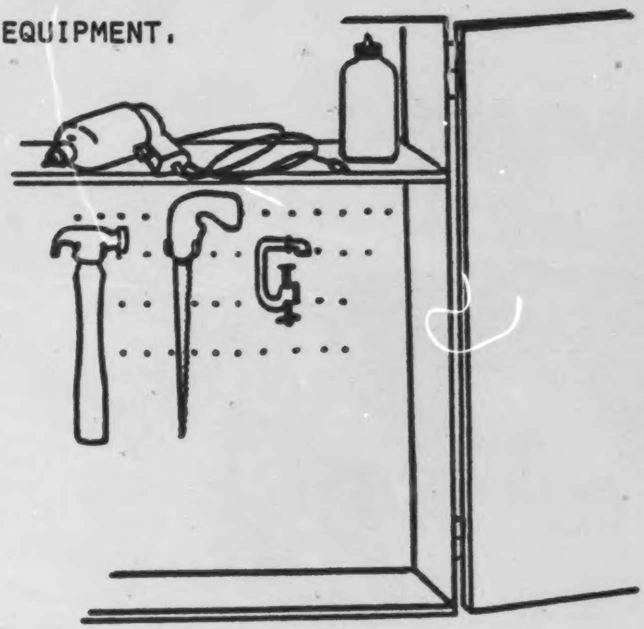
1. READ THIS MODULE.
2. GET YOUR EQUIPMENT.
3. DO JOB STEPS SO THAT THE TWO PIECES ARE FITTED TOGETHER AND WILL NOT COME APART.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL THE EQUIPMENT.

LOOK:

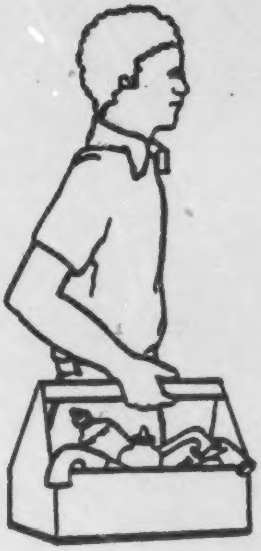


DO: DO JOB STEP 1.

CHECK: ASK YOUR INSTRUCTOR TO CHECK THAT YOU HAVE ALL THE EQUIPMENT IN THE PICTURE.

READ: 2. TAKE THE EQUIPMENT TO YOUR WORK AREA.

LOOK:

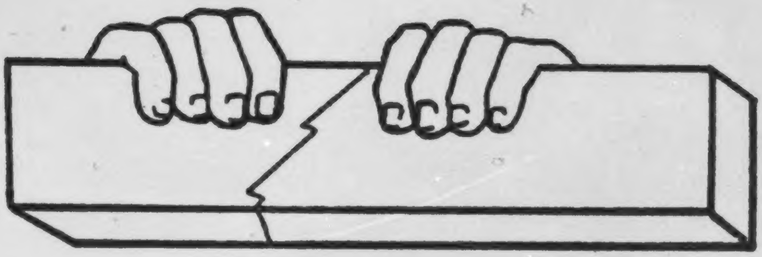


DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: 3. FIT TOGETHER THE 2 PIECES OF WOOD.

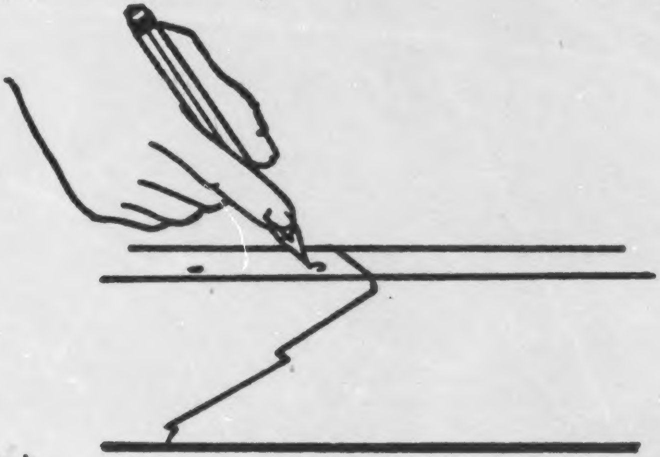
LOOK:



DO: DO JOB STEP 3.

READ: 4. USING YOUR PENCIL, MARK THE WOOD WHERE YOU WILL DRILL THE 2 HOLES.

LOOK:



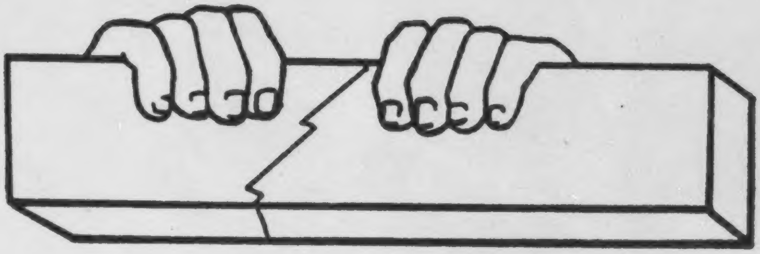
DO: DO JOB STEP 4.

CHECK: SHOW YOUR INSTRUCTOR HOW YOU WILL GLUE THE WOOD.
SHOW YOUR INSTRUCTOR WHERE YOU WILL DRILL 2 HOLES.

"TURN THE PAGE"

READ: 5. GLUE THE 2 WOOD PIECES SO THEY FIT TOGETHER.

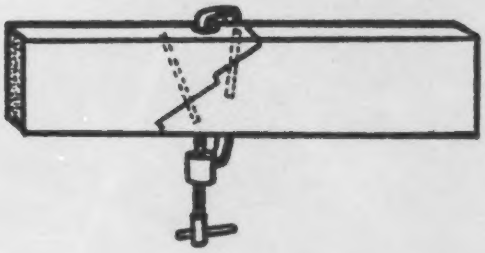
LOOK:



DO: DO JOB STEP 5.

READ: 6. QUICKLY, PUT THE "C" CLAMP ON THE WOOD. SET THE "C" CLAMP BETWEEN WHERE YOU WILL PUT THE 2 DOWEL-PINS.

LOOK:



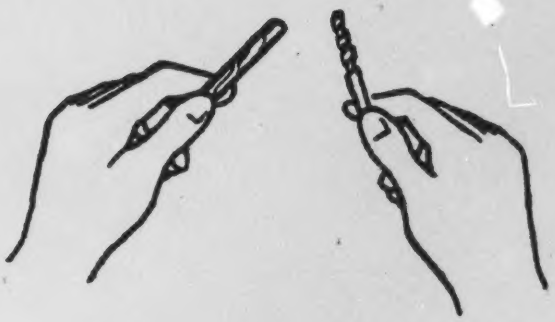
DO: DO JOB STEP 6.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

READ: 7. CHECK THE SIZE OF YOUR DOWEL-PINS. GET A DRILL BIT THE SAME SIZE AS THE DOWEL-PINS.

LOOK:

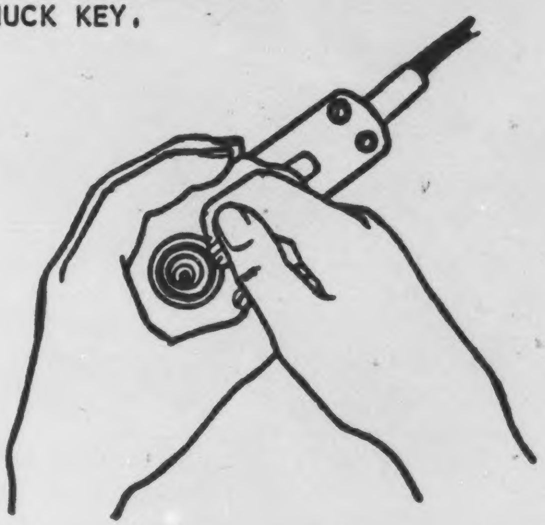


DO: Do JOB STEP 7.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR DRILL BIT AND DOWEL-PINS TO BE SURE THEY ARE THE SAME SIZE.

READ: 8. PUT DRILL BIT INTO DRILL CHUCK AND TIGHTEN CHUCK KEY.

LOOK:



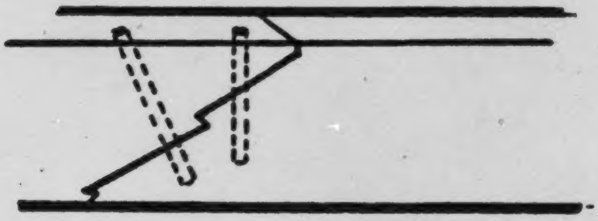
DO: Do JOB STEP 8.

CHECK: IF NECESSARY, READ MODULE 2201 20 002 1, HOW TO OPERATE AN ELECTRIC DRILL. TELL YOUR INSTRUCTOR HOW YOU WILL DRILL THE HOLES.

"TURN THE PAGE"

READ: 9. Drill 2 holes as shown in the picture.

LOOK:

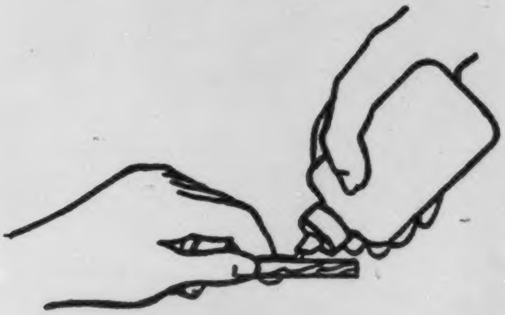


DO: Do job step 9.

CHECK: Ask your instructor to check your work.

READ: 10. Put white glue on dowel-pins. Then, wipe off extra glue.

LOOK:

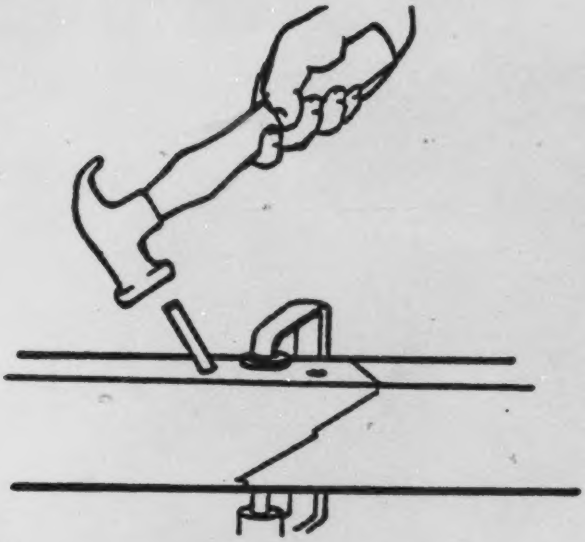


DO: Do job step 10.

"Turn the page"

READ: 11. HAMMER PINS INTO HOLES.

LOOK:

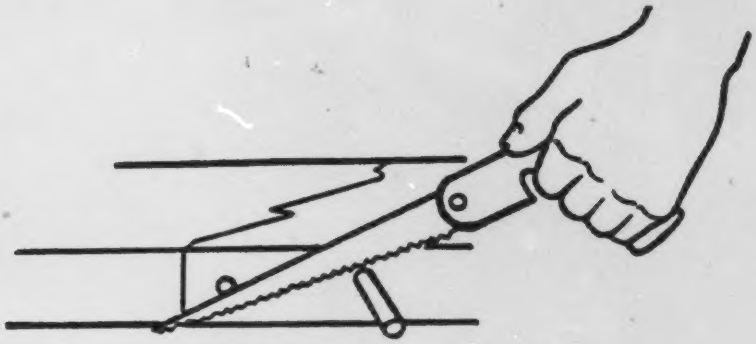


DO: Do JOB STEP 11.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU DO JOB STEP 11.

READ: 12. SAW OFF PINS.

LOOK:



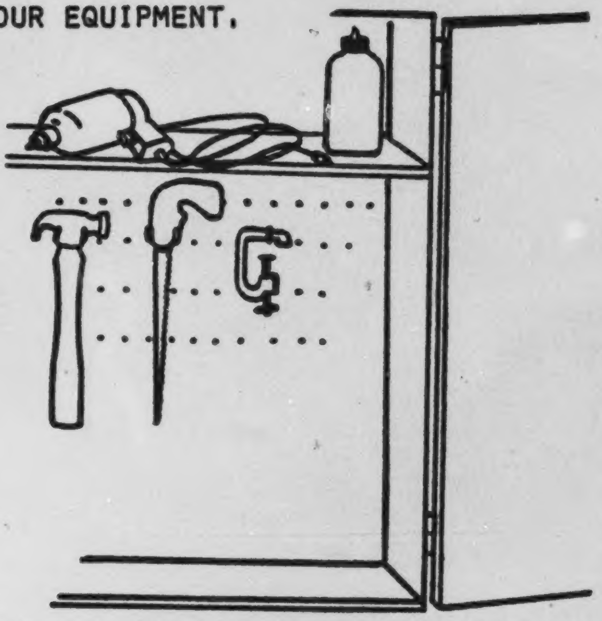
DO: Do JOB STEP 12.

CHECK: ASK YOUR INSTRUCTOR TO WATCH YOU DO JOB STEP 12.

"TURN THE PAGE"

READ: 13. PUT AWAY YOUR EQUIPMENT.

LOOK:

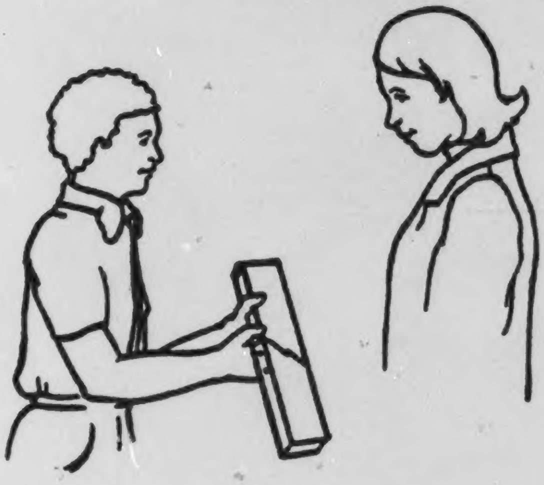


DO: Do JOB STEP 13.

CHECK: ASK YOUR INSTRUCTOR WHERE YOU SHOULD PUT YOUR WORK SO IT WILL DRY.

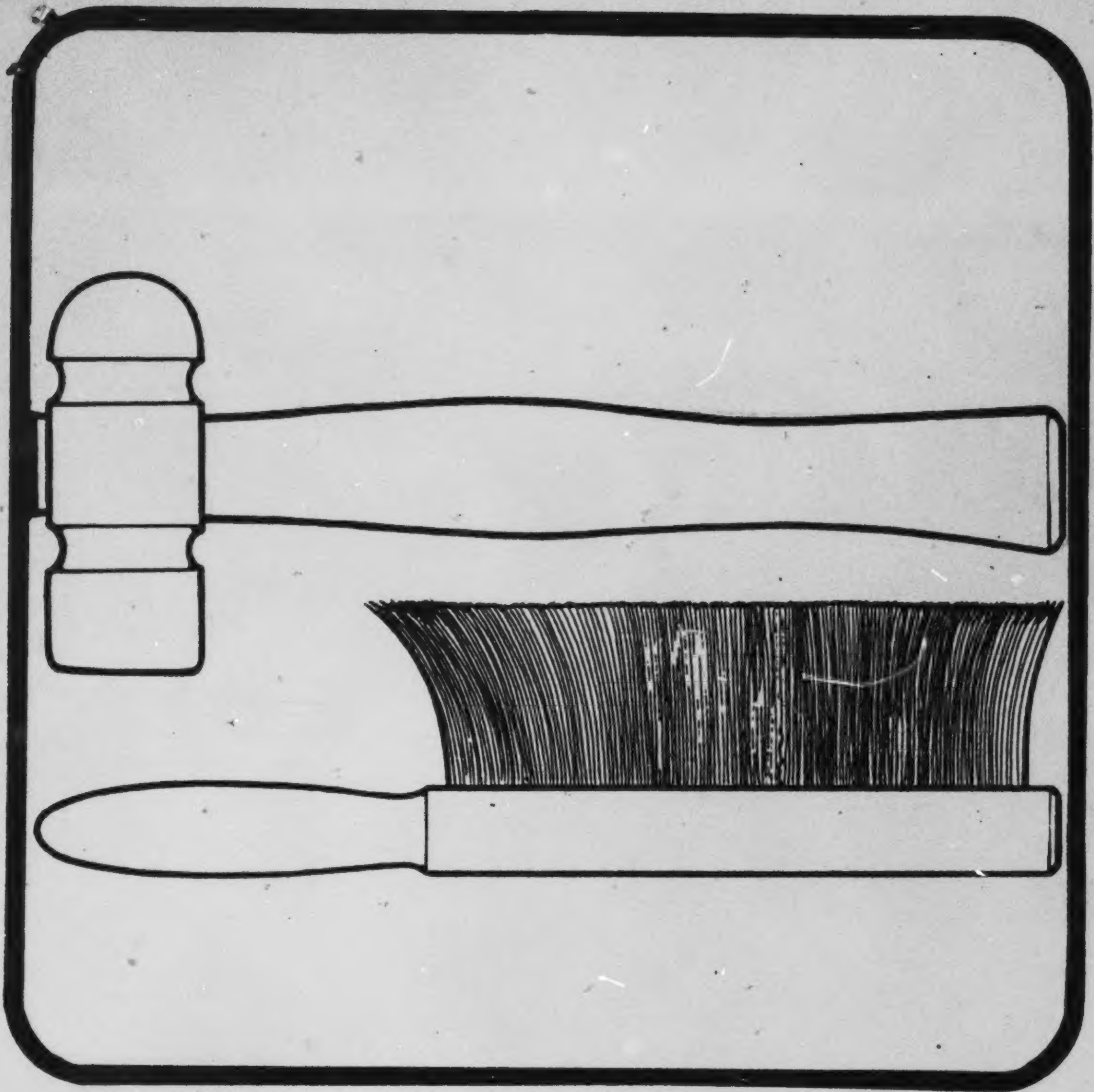
READ: 14. THE NEXT DAY, SHOW YOUR WORK TO YOUR INSTRUCTOR.

LOOK:



DO: Do JOB STEP 14.

CHECK: TELL YOUR INSTRUCTOR HOW TO FASTEN WOOD WITH DOWEL-PINS.



building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 001 1 **date:** AUGUST 1977 **level:** I

skill title: VISUAL INSPECTION - WINDOWS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

INSPECTION - Looking over something very carefully.

VISUAL - With eyes.

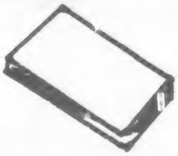
PERFORMANCE OBJECTIVE

What you will learn:

How to do a visual inspection of windows.

What you will need:

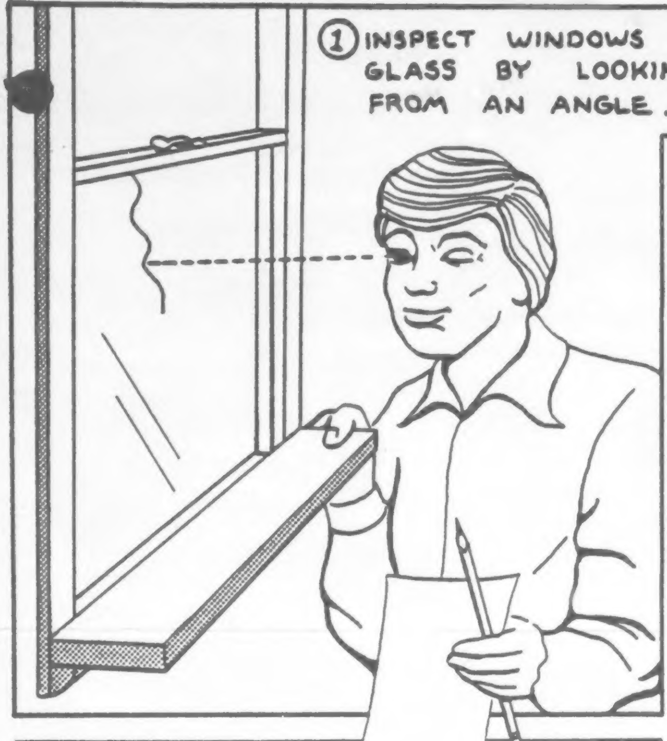
A pad



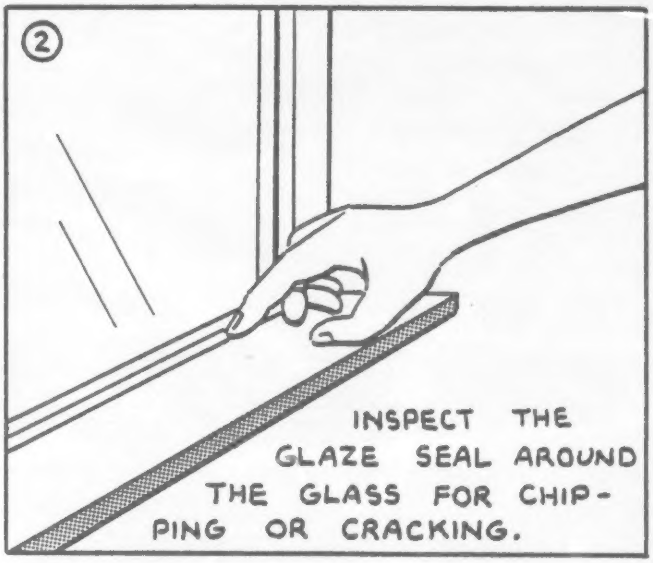
A pencil

What you must do:

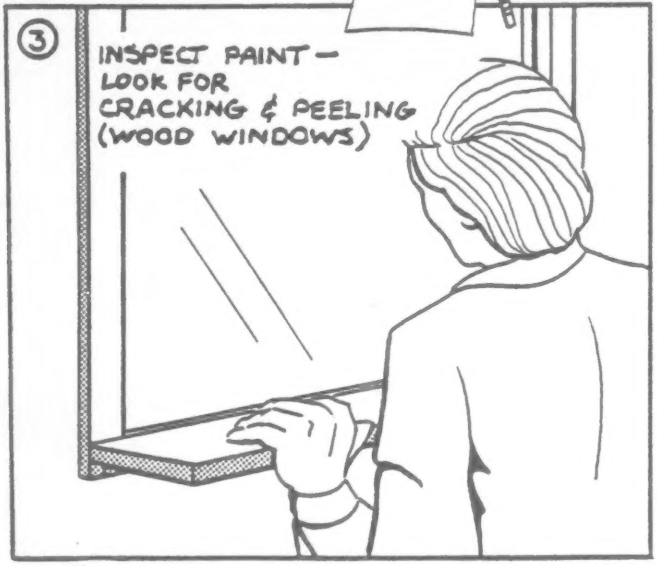
1. Read this module.
2. Get all equipment and materials.
3. Do the job steps for visually inspecting windows.



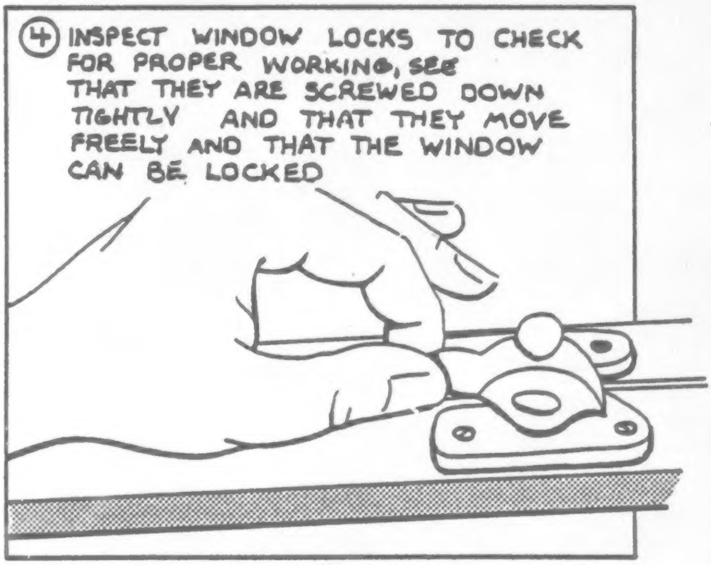
① INSPECT WINDOWS FOR CRACKS IN THE GLASS BY LOOKING AT THE GLASS FROM AN ANGLE.



② INSPECT THE GLAZE SEAL AROUND THE GLASS FOR CHIPPING OR CRACKING.

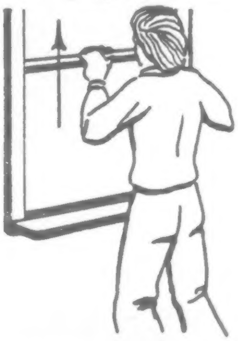


③ INSPECT PAINT — LOOK FOR CRACKING & PEELING (WOOD WINDOWS)

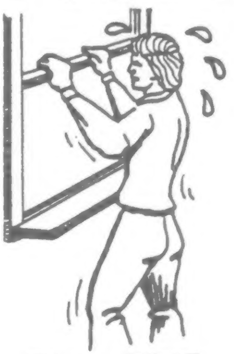


④ INSPECT WINDOW LOCKS TO CHECK FOR PROPER WORKING, SEE THAT THEY ARE SCREWED DOWN TIGHTLY AND THAT THEY MOVE FREELY AND THAT THE WINDOW CAN BE LOCKED

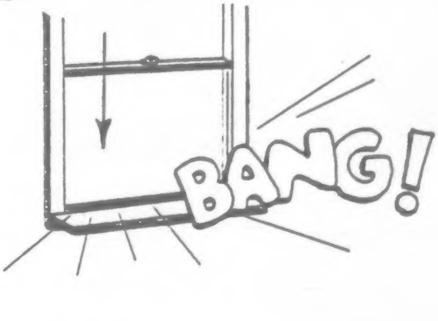
⑤ IF WINDOW OPENS AND CLOSES, CHECK for FREEDOM of MOVEMENT. IT SHOULD LIFT EASY & IT SHOULD NOT FALL



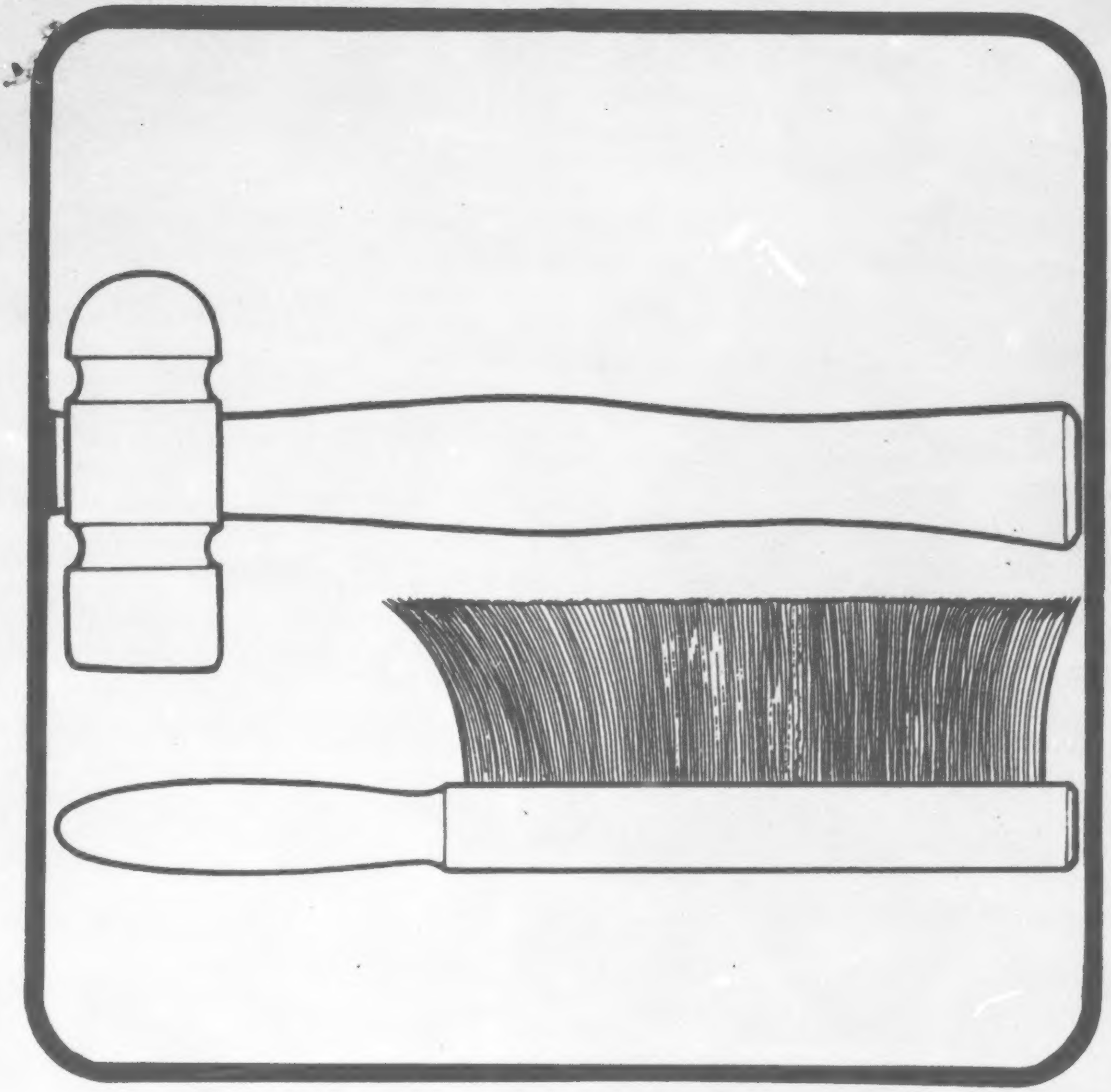
RIGHT MOVEMENT



TOO STIFF



TOO LOOSE



building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 003 1 date: AUGUST 1977 level: I

skill title: INSTALL WINDOW LOCK SET

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

→ CENTER PUNCH - TOOL USED TO MAKE A STARTER HOLE FOR A SCREW.

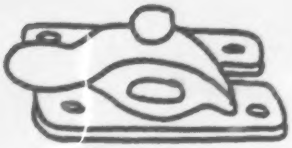
INSTALL - PUT IN.

PERFORMANCE OBJECTIVE

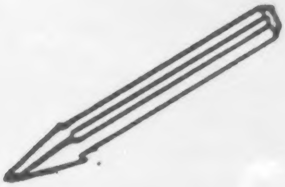
WHAT YOU WILL LEARN:

HOW TO INSTALL A WINDOW LOCK SET.

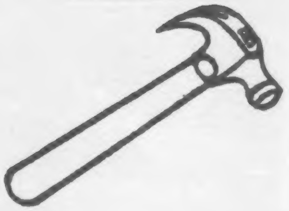
WHAT YOU WILL NEED:



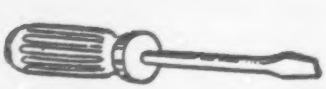
A WINDOW LOCK SET



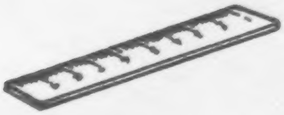
CENTER PUNCH



HAMMER



SCREWDRIVER



RULER

PENCIL

WHAT YOU MUST DO:

1. READ THIS MODULE.
2. GET ALL YOUR EQUIPMENT.
3. DO THE JOB STEPS FOR PUTTING IN A WINDOW LOCK SET.

"TURN THE PAGE"

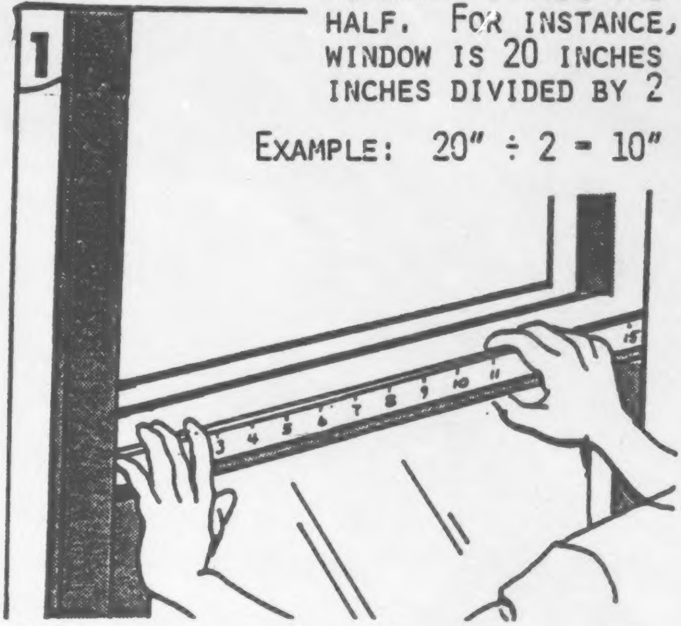
JOB STEPS

READ:

1. MEASURE THE DISTANCE ACROSS THE WINDOW. DIVIDE THE DISTANCE IN HALF. FOR INSTANCE, IF THE WINDOW IS 20 INCHES ACROSS, 20 INCHES DIVIDED BY 2 IS 10.

EXAMPLE: 20" ÷ 2 = 10"

LOOK:

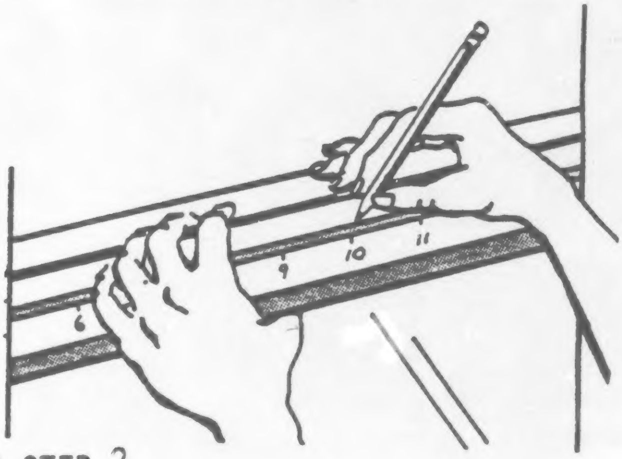


DO: Do JOB STEP 1.

READ:

2. MEASURE IN FROM ONE SIDE THE DISTANCE FOUND IN STEP 1 AND PLACE A PENCIL MARK. THIS IS THE CENTER OF THE WINDOW.

LOOK:

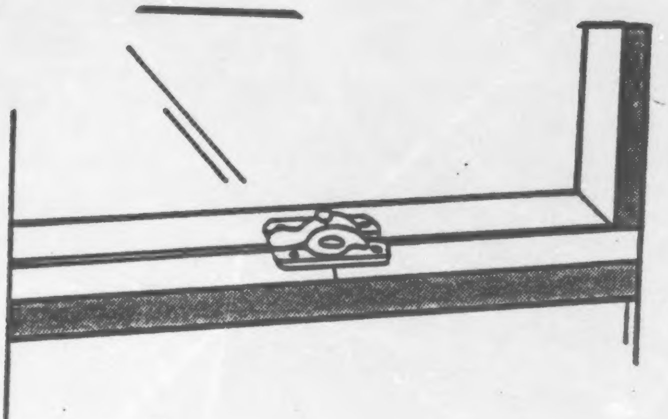


DO: Do JOB STEP 2.

"TURN THE PAGE"

READ: 3. PLACE WINDOW LOCK ON THE BOTTOM OF THE TOP WINDOW AND THE TOP OF THE BOTTOM WINDOW. CENTER IT ON THE MARK AND IN A LOCKED POSITION.

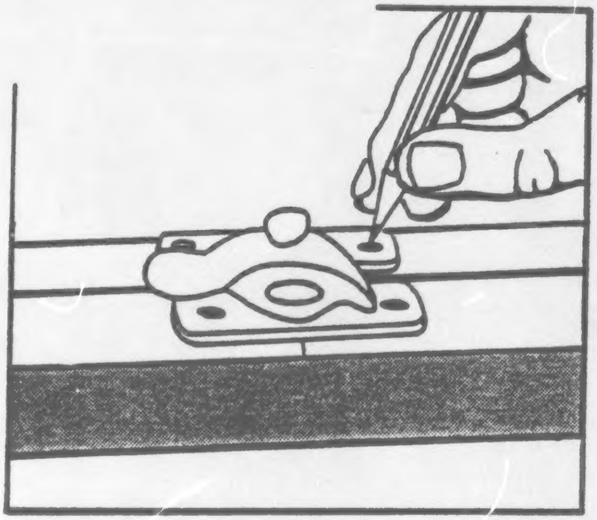
LOOK:



DO: DO JOB STEP 3.

READ: 4. PLACE THE POINT OF A PENCIL IN EACH OF THE FOUR HOLES. MAKE A MARK WITH THE PENCIL.

LOOK:

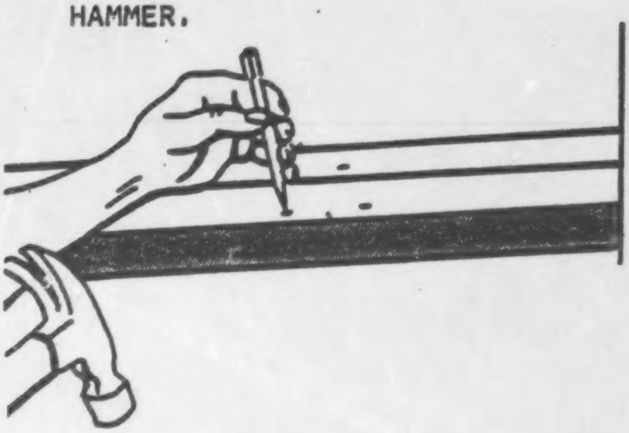


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. CENTER PUNCH EACH HOLE MARK WITH THE PUNCH AND HAMMER.

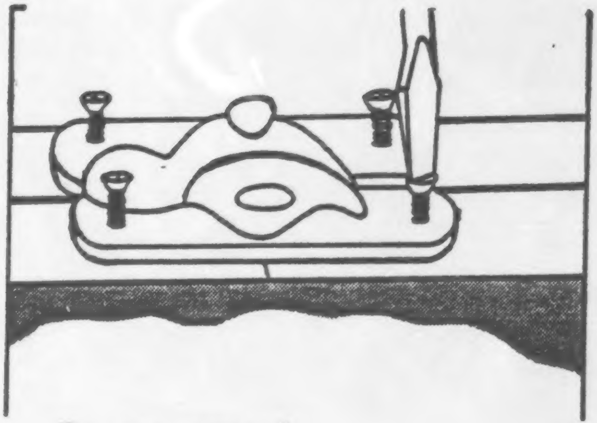
LOOK:



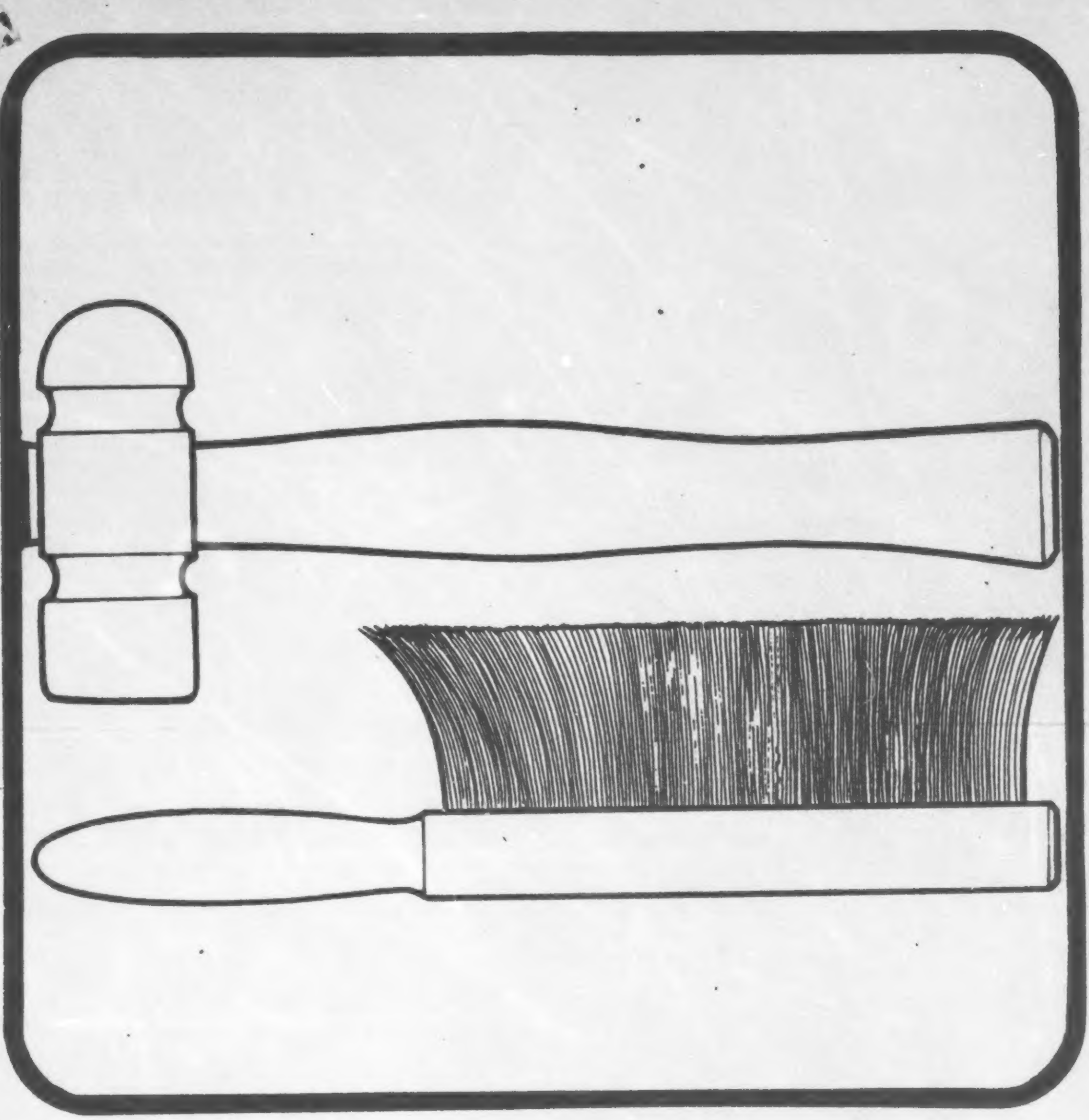
DO: DO JOB STEP 5.

READ: 6. PLACE A SCREW IN EACH HOLE AND FASTEN TIGHTLY WITH A SCREWDRIVER.

LOOK:



DO: DO JOB STEP 5.



building maintenance & engineering

unit: WINDOWS

capital area career center

module: 2201 23 004 1 date: AUGUST 1977 level: I

skill title: LUBRICATE WINDOWS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

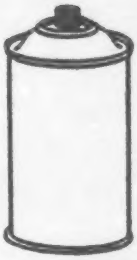
PERFORMANCE OBJECTIVE

WHAT YOU WILL LEARN:

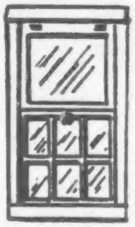
HOW TO OIL WINDOW TRACKS.

WHAT YOU WILL NEED:

A CAN OF SILICONE SPRAY



A WINDOW



WHAT YOU MUST DO:

1. READ THIS MODULE.
2. GET ALL YOUR EQUIPMENT AND MATERIALS.
3. DO THE JOB STEPS FOR OILING WINDOW TRACKS UNTIL THE WINDOW FRAMES MOVE UP AND DOWN SMOOTHLY. WINDOW TRACKS SHOULD NOT STICK.

TRACKS - PART OF WINDOW ON
WHICH THE FRAME
MOVES UP AND DOWN.

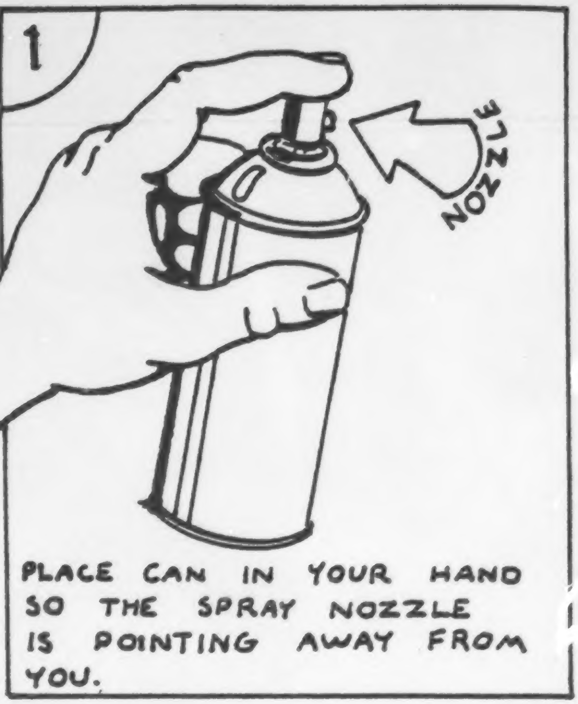
INFORMATION

PARTS WHICH RUB TOGETHER SOMETIMES MUST BE OILED TO KEEP THEM WORKING SMOOTHLY.

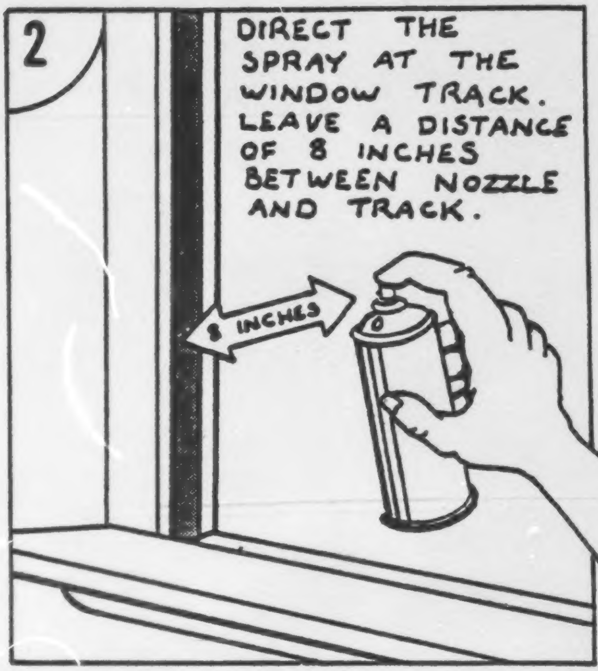
YOU CAN USE SILICONE SPRAY ON EITHER WOOD OR ALUMINUM TRACKS, BUT NOT ON WINDOWS WHICH HAVE ALUMINUM TRACKS AND A WOOD FRAME. THE ALUMINUM PRESSES AGAINST THE WOOD FRAME AND HOLDS THE FRAME IN PLACE. IF YOU OIL THIS TYPE WINDOW, THE FRAME WILL SLIP OUT OF PLACE AGAINST THE TRACK.

CAUTION: DO NOT POINT SPRAY AT ANYTHING EXCEPT THE WINDOW TRACK.

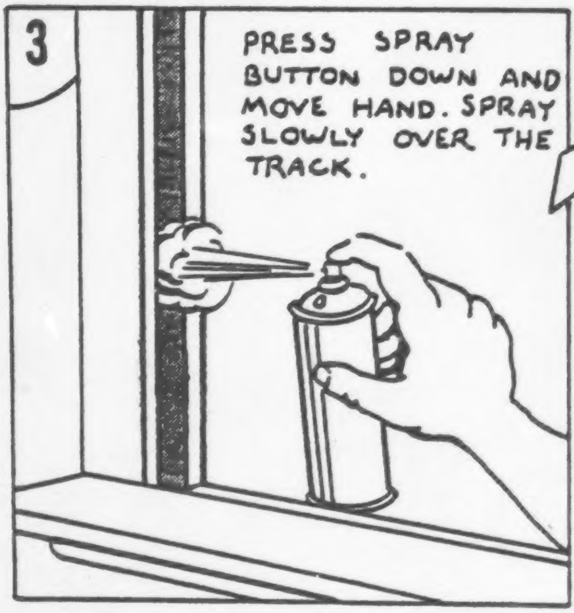
JOB STEPS



PLACE CAN IN YOUR HAND SO THE SPRAY NOZZLE IS POINTING AWAY FROM YOU.

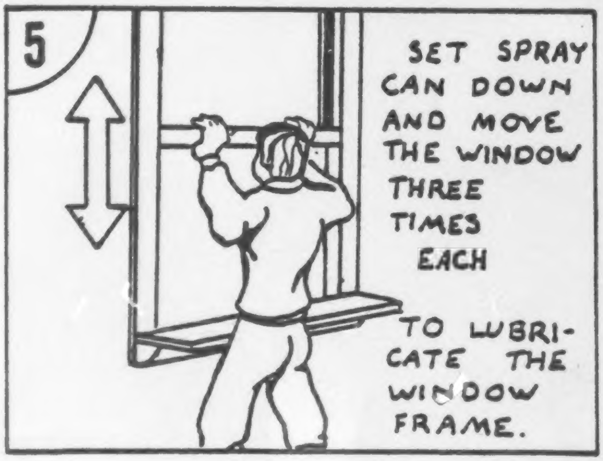


DIRECT THE SPRAY AT THE WINDOW TRACK. LEAVE A DISTANCE OF 8 INCHES BETWEEN NOZZLE AND TRACK.

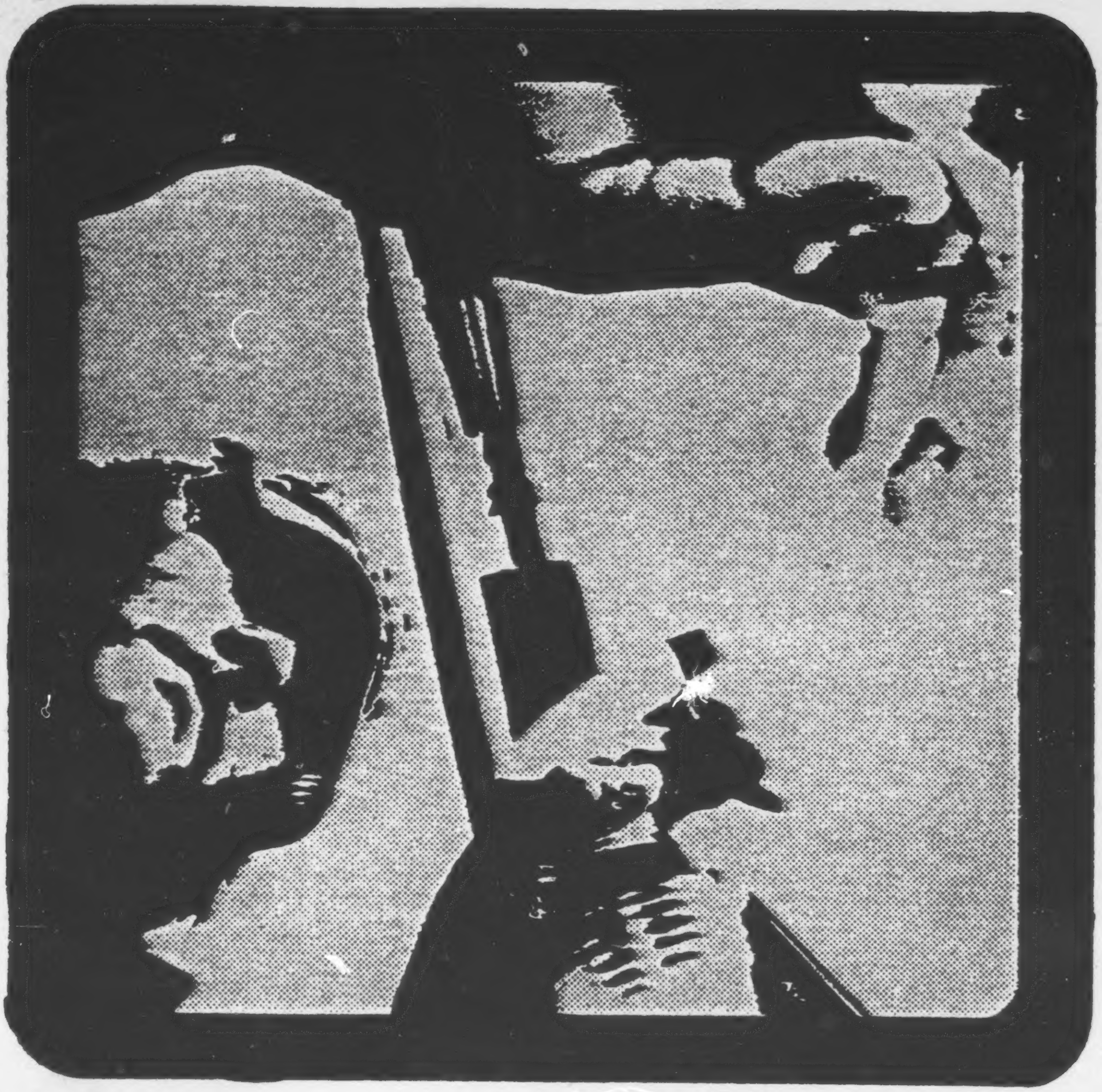


PRESS SPRAY BUTTON DOWN AND MOVE HAND. SPRAY SLOWLY OVER THE TRACK.

4 DO THE SAME TO THE TRACK.



SET SPRAY CAN DOWN AND MOVE THE WINDOW THREE TIMES EACH TO LUBRICATE THE WINDOW FRAME.



building maintenance & engineering

unit: Door Maintenance

capital area career center

module: 2201 24 001 1 date: 5/77 level: I

skill title: Visual Inspection and Maintenance of Doors

developed & written by: Dwight Smith

visuals by: Glen Cooley

WORD GUIDE

INSPECT - LOOK AT CAREFULLY TO FIND ANY PROBLEMS.

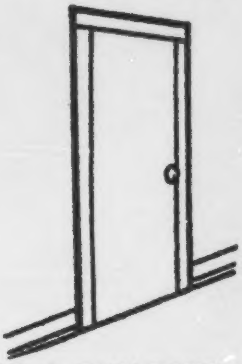
MAINTAIN - KEEP IN GOOD WORKING ORDER.

PERFORMANCE OBJECTIVE

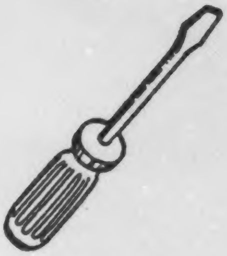
WHAT YOU WILL LEARN:

HOW TO LOOK AT, INSPECT AND MAINTAIN DOORS IN A BUILDING.

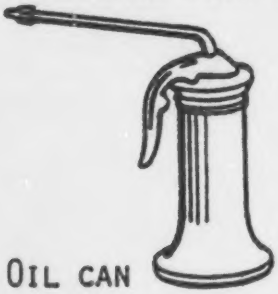
WHAT YOU WILL NEED:



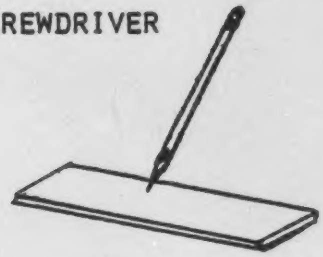
A MOUNTED DOOR IN A BUILDING



SCREWDRIVER



OIL CAN



PAPER AND PENCIL

WHAT YOU MUST DO:

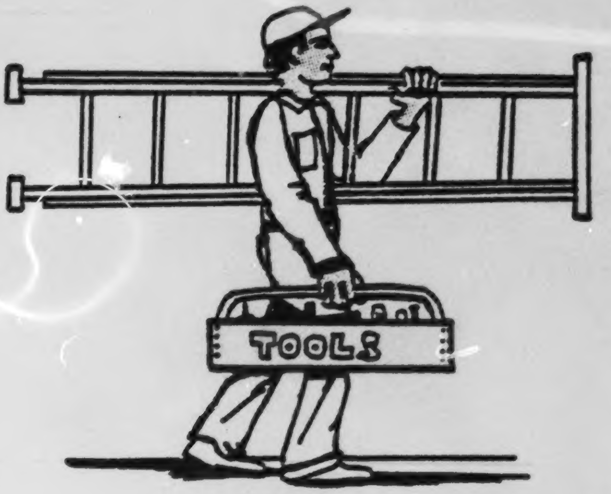
1. READ THIS MODULE.
2. GET YOUR EQUIPMENT.
3. DO ALL THE JOB STEPS ON HOW TO INSPECT AND MAINTAIN DOORS IN A BUILDING.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET ALL MATERIALS AND GO TO YOUR WORK AREA.

LOOK:

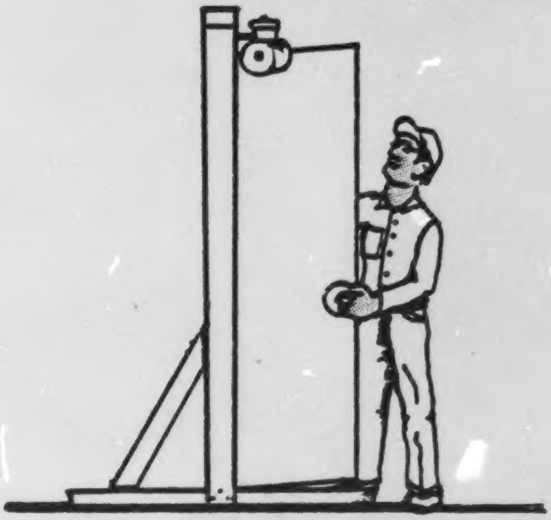


DO: Do JOB STEP 1.

CHECK: LOOK AT THE PICTURE ABOVE AND SEE IF YOU HAVE EVERYTHING. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

READ: 2. CHECK THE DOORKNOB BY OPENING AND CLOSING THE DOOR 3 OR 4 TIMES. LOOK FOR LOOSE SCREWS.

LOOK:

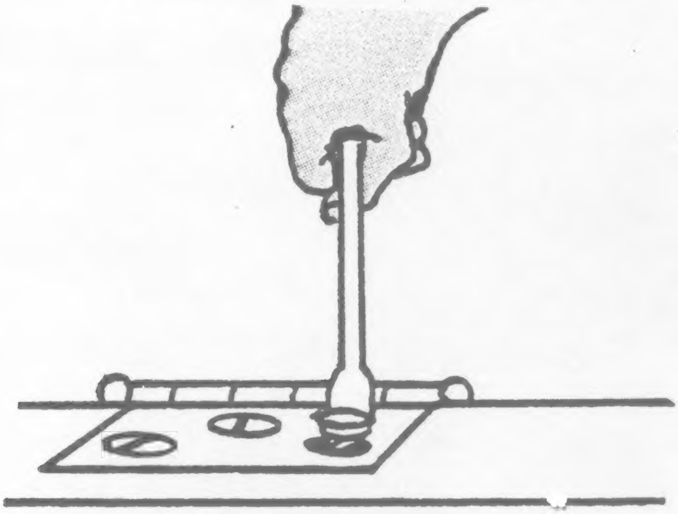


DO: Do JOB STEP 2.

"TURN THE PAGE"

READ: 3. USING THE SCREWDRIVER, TIGHTEN ANY LOOSE SCREWS YOU FIND.

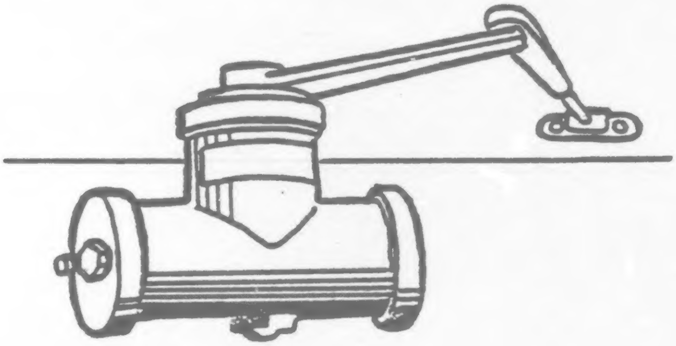
LOOK:



DO: DO JOB STEP 3.

READ: 4. LOOK CAREFULLY AT THE DOOR-CLOSER. LOOK FOR ANY LOOSE SCREWS AND TIGHTEN ANY YOU CAN FIND.

LOOK:

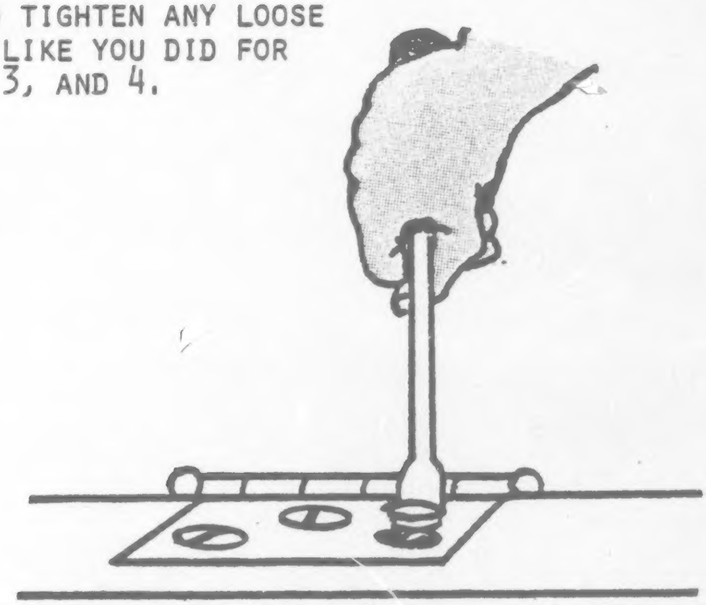


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. CHECK FOR AND TIGHTEN ANY LOOSE HINGE SCREWS LIKE YOU DID FOR JOB STEPS 2, 3, AND 4.

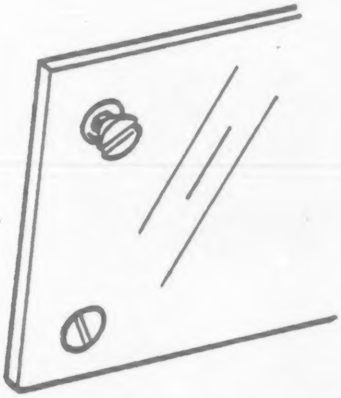
LOOK:



DO: DO JOB STEP 5.

READ: 6. CHECK FOR AND TIGHTEN ANY LOOSE SCREWS ON THE KICK-PLATE.

LOOK:

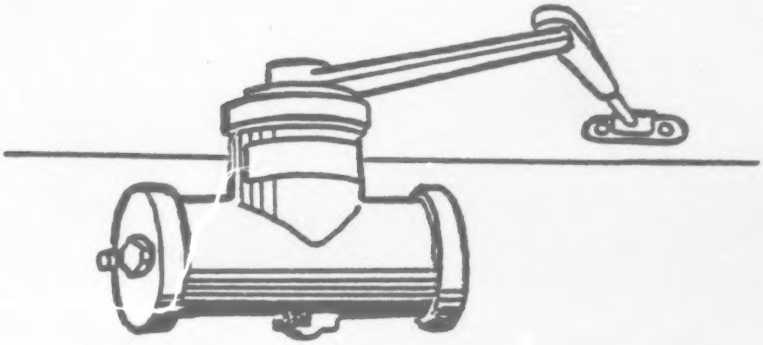


DO: DO JOB STEP 6.

"TURN THE PAGE"

READ: 7. CHECK THE DOOR-CLOSER. SET IT LIKE YOU DID IN MOD 2201 02 024 1.

LOOK:

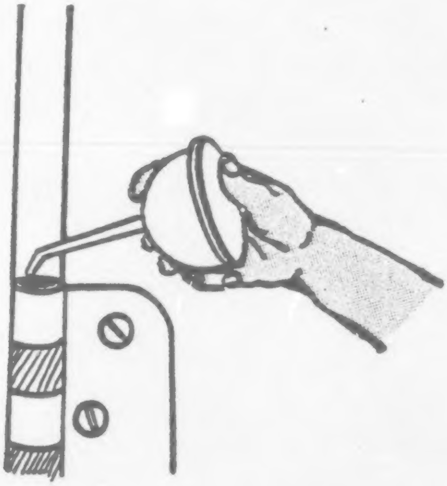


DO: DO JOB STEP 7.

READ: 8. USING THE OIL CAN, OIL THE HINGES.

NOTE: USE 4 OR 5 DROPS ON EACH HINGE.

LOOK:

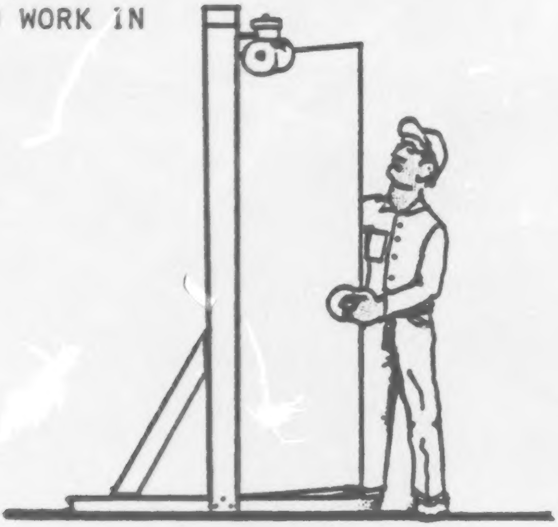


DO: DO JOB STEP 8.

"TURN THE PAGE"

READ: 9. OPEN AND CLOSE THE DOOR 4 OR 5 TIMES TO WORK IN THE OIL.

LOOK:



DO: DO JOB STEP 9.

READ: 10. CHECK DOOR CAREFULLY FOR DAMAGE. CHECK FOR:

A. BROKEN OR WORN-OUT PARTS.

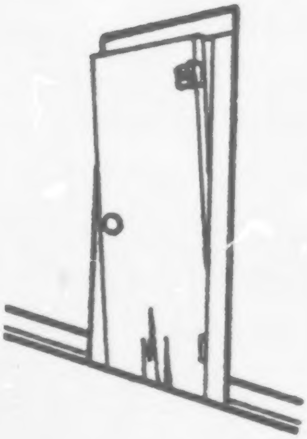
B. WOOD SLIVERS.

C. DAMAGED FINISH (PAINT OR VARNISH).

D. DENTS.

WRITE DOWN ANY DAMAGES YOU FIND.

LOOK:



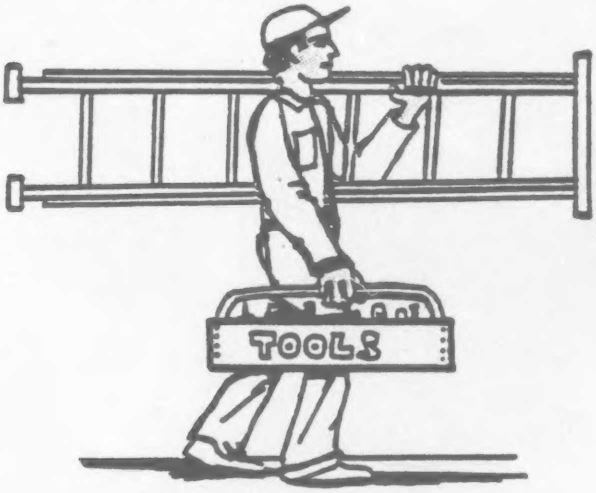
DO: DO JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK. SHOW YOUR INSTRUCTOR YOUR LIST OF DAMAGES FROM JOB STEP 10.

"TURN THE PAGE"

READ: 11. PUT AWAY YOUR EQUIPMENT AND SUPPLIES.

LOOK:



DO: Do JOB STEP 11.

READ: 12. NOW YOU CAN INSPECT DOORS IN A BUILDING.

building maintenance & engineering

unit: DOOR MAINTENANCE

capital area career center

module: 2201 24 002 1 date: 5/77 level: II

skill title: HANG A DOOR

developed & written by: DWIGHT SMITH

visuals by: GLEN COOLEY

WORD GUIDE

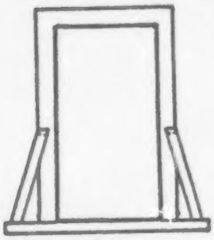
"HANG" A DOOR - TO PUT A DOOR INTO A FRAME.

PERFORMANCE OBJECTIVE

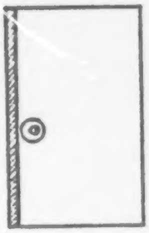
WHAT YOU WILL LEARN:

HOW TO HANG A DOOR.

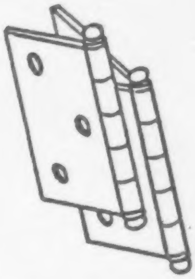
WHAT YOU WILL NEED:



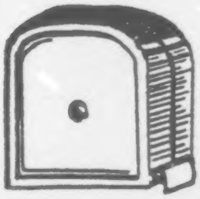
DOOR OPENING



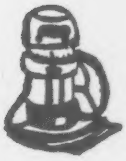
DOOR



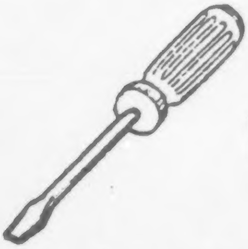
2 HINGES



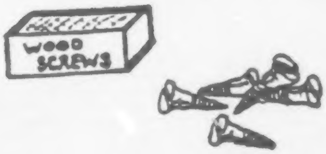
STEEL TAPE-MEASURE



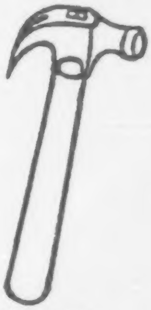
ROUTER & BIT



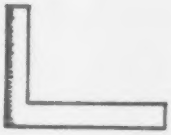
SCREWDRIVER



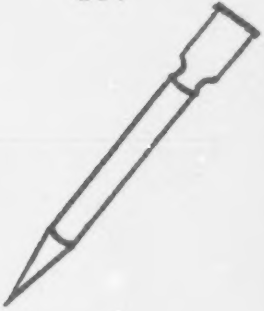
12 WOOD SCREWS



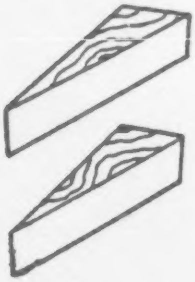
HAMMER



TRI-SQUARE



CENTER PUNCH



WOOD WEDGES

PENCIL AND PAPER

"TURN THE PAGE"

WORD GUIDE

CLEARANCE - CLEAR SPACE BETWEEN OBJECTS.

PERFORMANCE OBJECTIVE

WHAT YOU MUST DO:

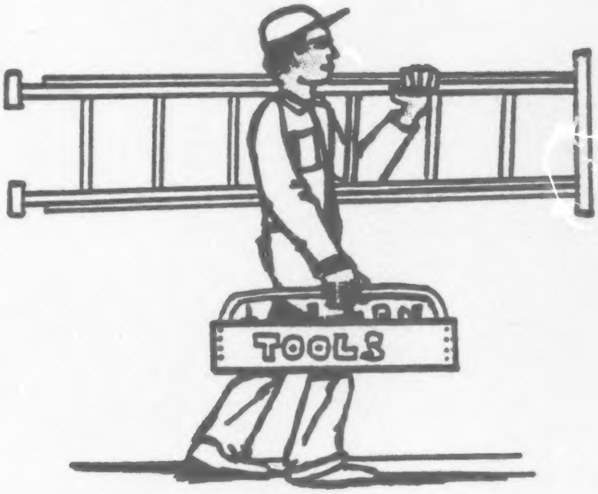
1. GET YOUR EQUIPMENT.
2. READ THIS MOD AND DO THE JOB STEPS TO HANG A DOOR.
3. HANG A DOOR SO THAT IT:
    - A. HAS 1/8 INCH CLEARANCE ON TOP AND SIDES AND 1 INCH ON THE BOTTOM.
    - B. DOES NOT STICK WHEN IT IS OPENED OR CLOSED.

"TURN THE PAGE"

JOB STEPS

READ: 1. GET THE EQUIPMENT AND SUPPLIES YOU WILL NEED AND GO TO YOUR WORK AREA.

LOOK:

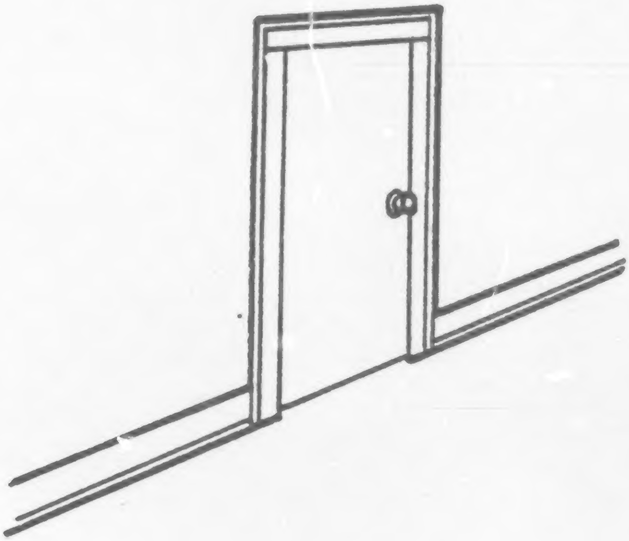


DO: DO JOB STEP 1.

CHECK: LOOK AT THE PICTURE ABOVE AND SEE IF YOU HAVE EVERYTHING. YOUR INSTRUCTOR WILL TELL YOU WHERE TO GO.

READ: 2. PUT THE DOOR INTO THE DOOR OPENING.

LOOK:

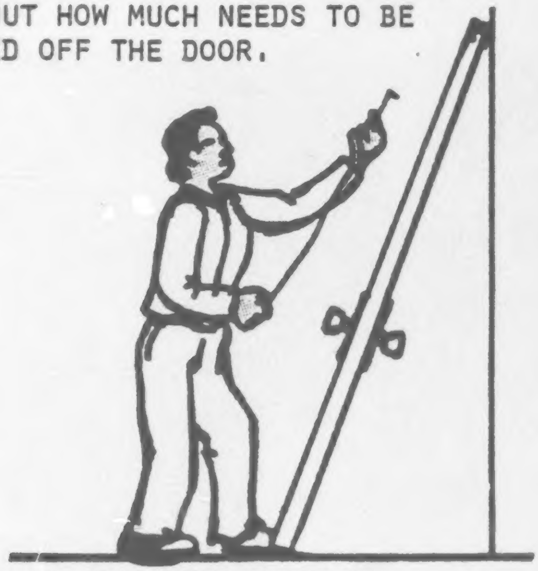


DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: 3. USE THE STEEL TAPE-MEASURE AND MEASURE THE DOOR FOR A GOOD FIT. FIND OUT HOW MUCH NEEDS TO BE TRIMMED OFF THE DOOR.

LOOK:

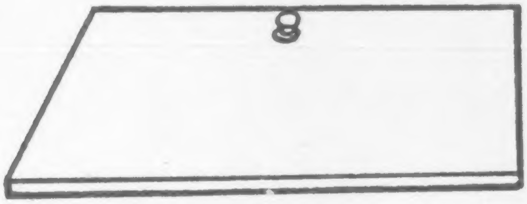


DO: DO JOB STEP 3.

CHECK: ASK YOUR INSTRUCTOR TO HELP YOU TRIM THE DOOR FOR A GOOD FIT.

READ: 4. PLACE THE DOOR FLAT ON THE FLOOR.

LOOK:

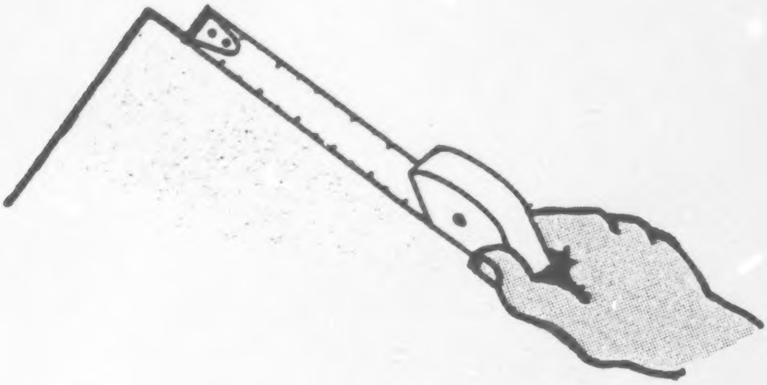


DO: DO JOB STEP 4.

"TURN THE PAGE"

READ: 5. USE THE STEEL TAPE-MEASURE AND ON THE HINGE SIDE, MEASURE 7 INCHES DOWN FROM THE TOP OF THE DOOR.

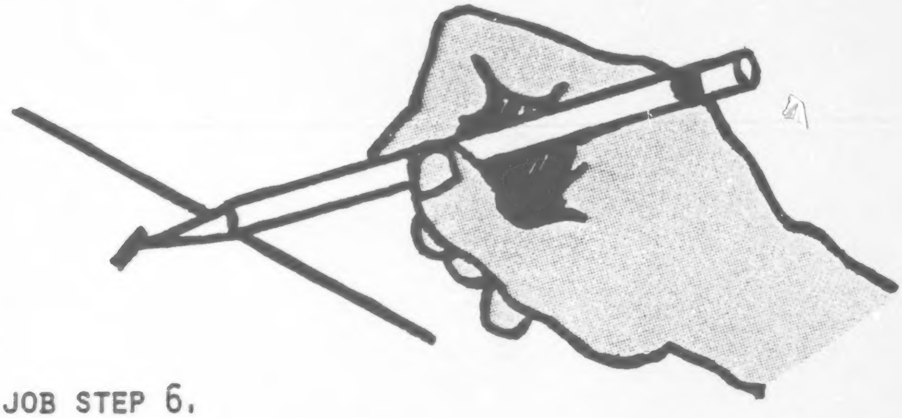
LOOK:



DO: DO JOB STEP 5.

READ: 6. USING A PENCIL, MARK THE SPOT.

LOOK:

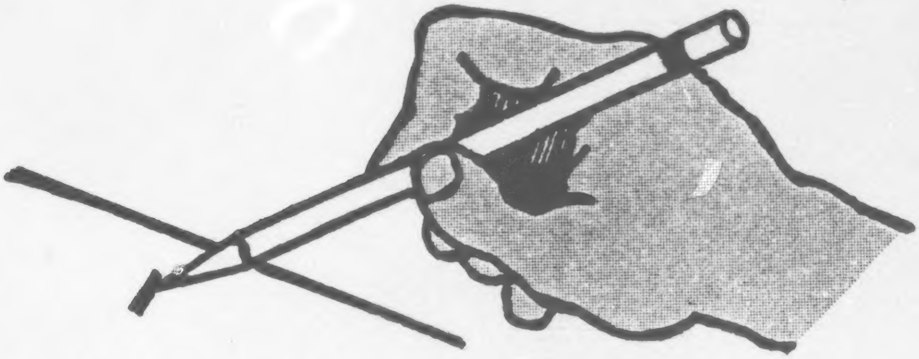


DO: DO JOB STEP 6.

"TURN THE PAGE"

READ: 7. MEASURE 7 INCHES FROM THE BOTTOM OF THE DOOR ON THE HINGE SIDE AND MARK IT LIKE YOU DID IN JOB STEP 6.

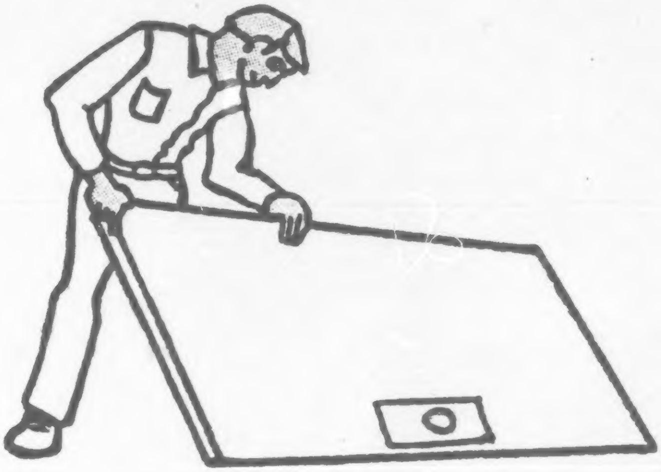
LOOK:



DO: DO JOB STEP 7.

READ: 8. TURN THE DOOR UP ON ITS SIDE WITH THE HINGE EDGE FACING UP.

LOOK:

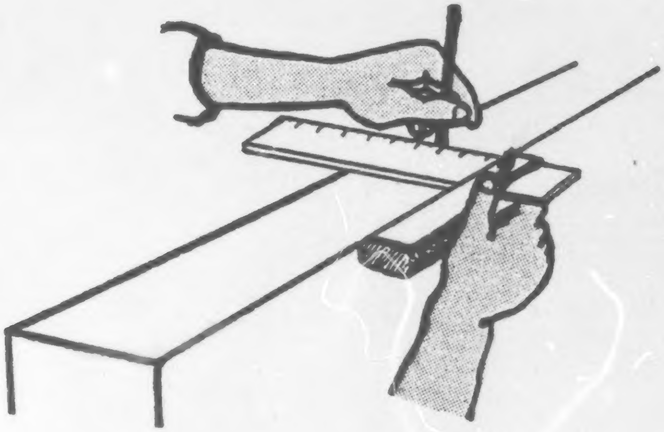


DO: DO JOB STEP 8.

"TURN THE PAGE"

READ: 9. USING THE TRI-SQUARE AND A PENCIL, DRAW A SQUARE LINE ACROSS THE EDGE OF THE DOOR WHERE YOU MARKED IT.

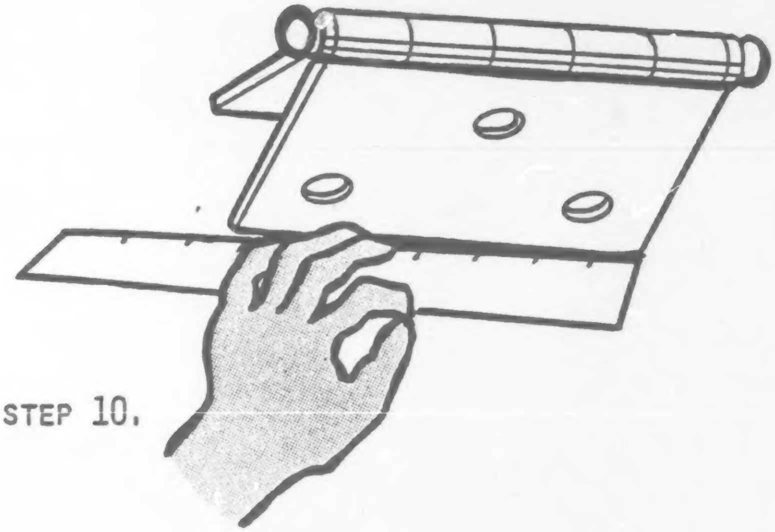
LOOK:



DO: DO JOB STEP 9.

READ: 10. MEASURE THE LENGTH OF THE HINGES YOU WILL USE. WRITE DOWN THEIR SIZE.

LOOK:

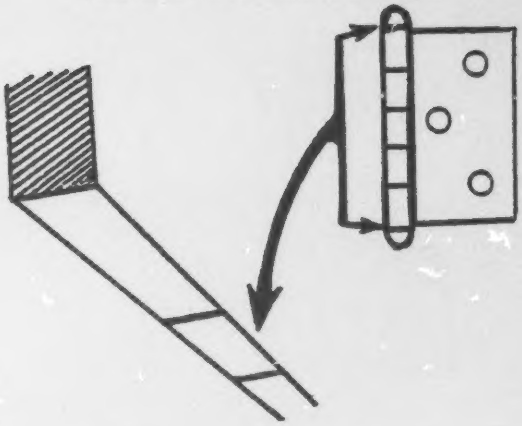


DO: DO JOB STEP 10.

"TURN THE PAGE"

READ: 11. USE THE STEEL TAPE-MEASURE TO MEASURE THE LENGTH OF THE HINGES IN TOWARDS THE CENTER OF THE DOOR (FROM THE LINES YOU DREW ACROSS THE HINGE EDGE).

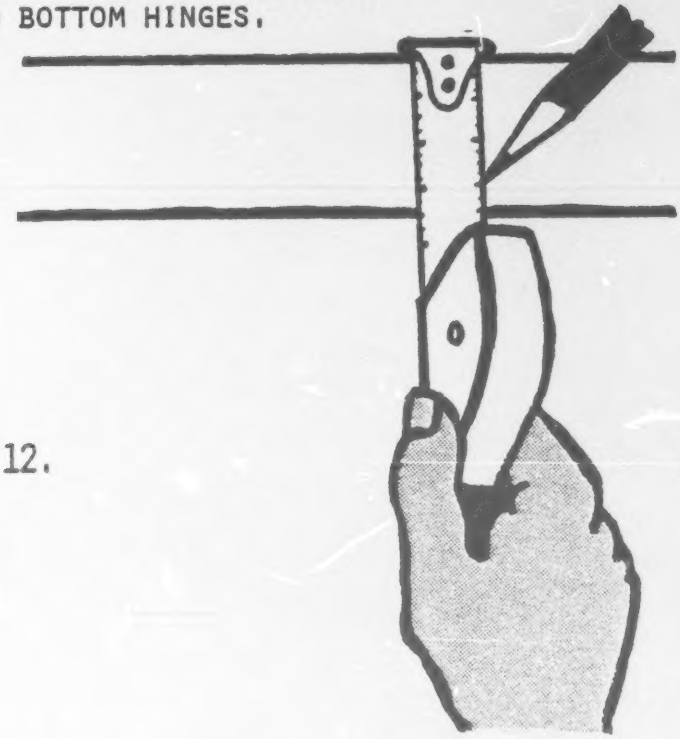
LOOK:



DO: Do JOB STEP 11.

READ: 12. USING A PENCIL, MARK THE SPOT ON THE TOP AND BOTTOM HINGE SPOTS WHERE THE HINGE WILL END. MARK THE SPOTS FOR BOTH TOP AND BOTTOM HINGES.

LOOK:

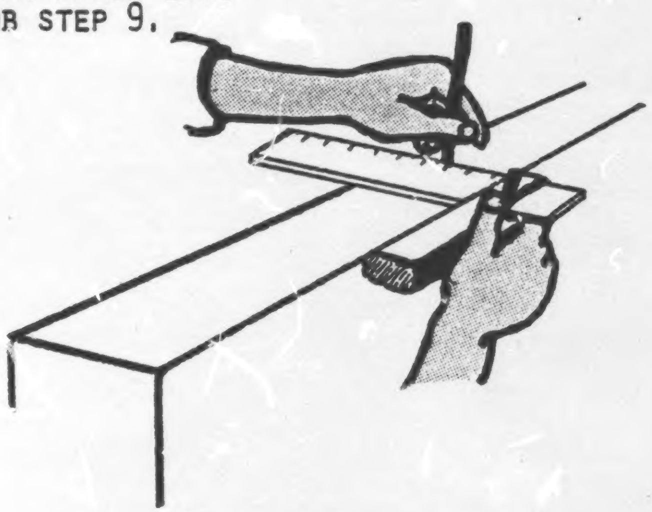


DO: Do JOB STEP 12.

"TURN THE PAGE"

READ: 13. USING THE TRI-SQUARE AND A PENCIL, DRAW A SQUARE LINE ACROSS THE DOOR EDGE, LIKE YOU DID IN JOB STEP 9.

LOOK:

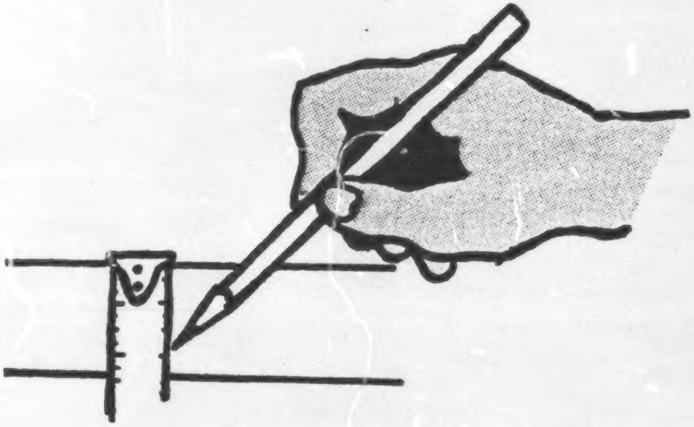


DO: DO JOB STEP 13.

READ: 14. USE THE STEEL TAPE-MEASURE AND MEASURE 1/4 INCH IN FROM THE INSIDE OF THE DOOR.

NOTE: THE HINGE PIN MUST BE ON THE OUTSIDE OF THE DOOR.

LOOK:

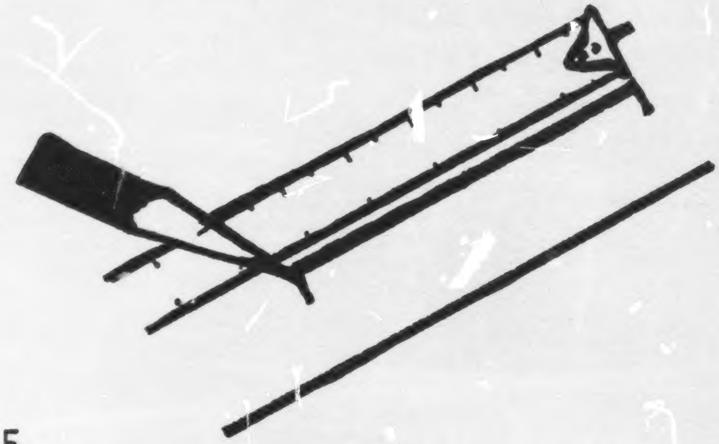


DO: DO JOB STEP 14.

"TURN THE PAGE"

READ: 15. USING THE PENCIL, DRAW A LINE BETWEEN THE LINES YOU MADE FOR THE TOP HINGE. DRAW A LINE LIKE THIS:

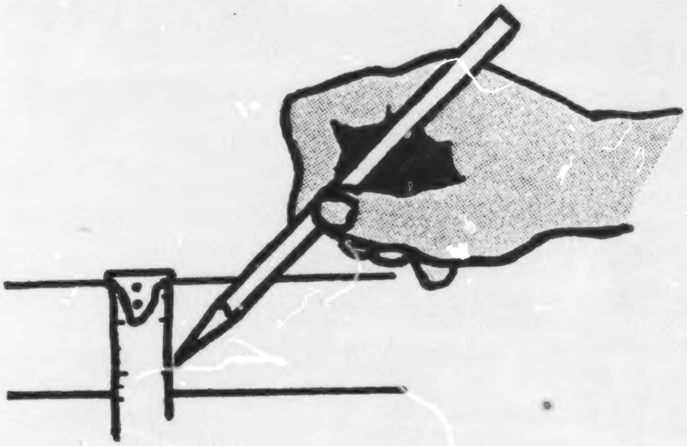
LOOK:



DO: DO JOB STEP 15.

READ: 16. REPEAT JOB STEPS 14 AND 15 FOR THE BOTTOM HINGE.

LOOK:

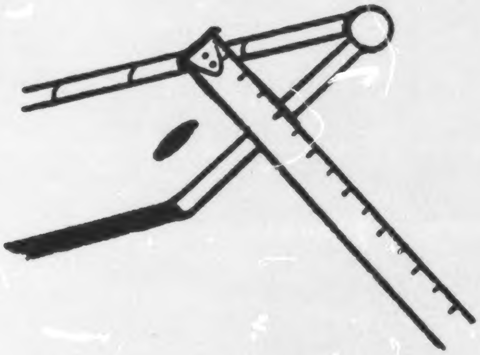


DO: DO JOB STEP 16.

"TURN THE PAGE"

READ: 17. USE THE STEEL TAPE-MEASURE AND MEASURE THE THICKNESS OF THE HINGE. WRITE DOWN THIS SIZE.

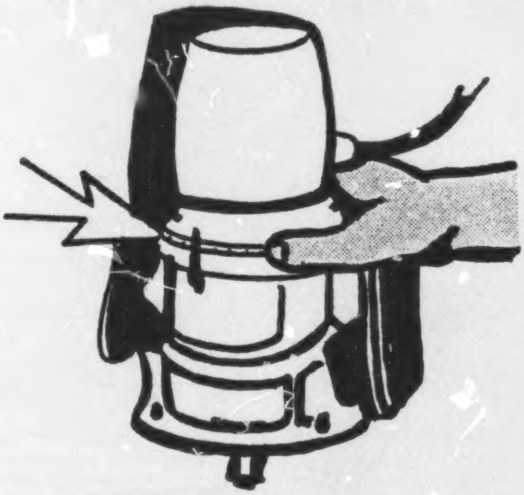
LOOK:



DO: DO JOB STEP 17.

READ: 18. SET THE ROUTER BIT FOR THE THICKNESS OF THE HINGE MEASURED IN JOB STEP 17.

LOOK:



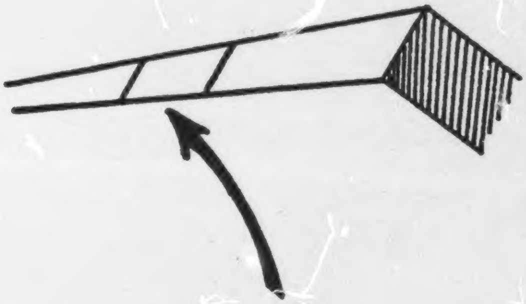
DO: DO JOB STEP 18.

CHECK: ASK YOUR INSTRUCTOR TO HELP YOU SET THE ROUTER BIT.

"TURN THE PAGE"

READ: 19. ASK YOUR INSTRUCTOR TO HELP YOU ROUT-OUT THE WOOD BETWEEN THE LINES YOU DREW ON THE DOOR EDGE.

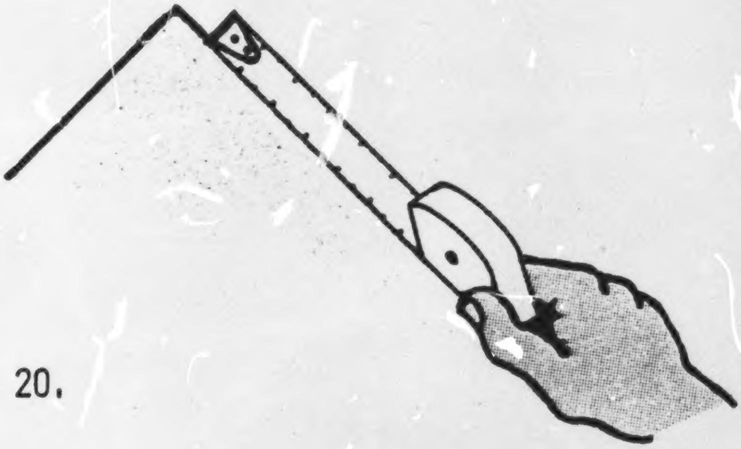
LOOK:



DO: Do JOB STEP 19.

READ: 20. USE THE STEEL TAPE-MEASURE AND MEASURE 7 1/8 INCHES FROM THE TOP OF THE DOOR OPENING.

LOOK:

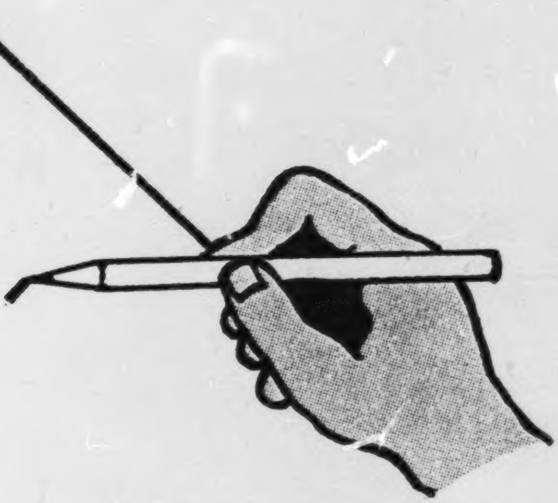


DO: Do JOB STEP 20.

"TURN THE PAGE"

READ: 21. USING THE PENCIL, MARK THE SPOT.

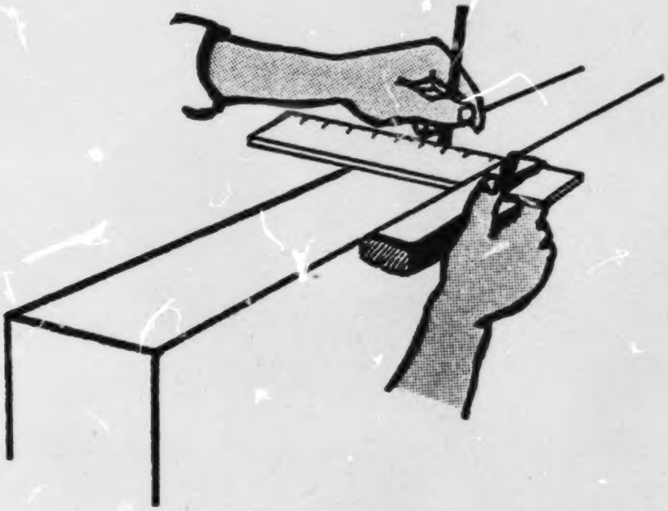
LOOK:



DO: DO JOB STEP 21.

READ: 22. USING THE TRI-SQUARE AND A PENCIL, DRAW A SQUARE LINE ACROSS THE DOOR CASING.

LOOK:

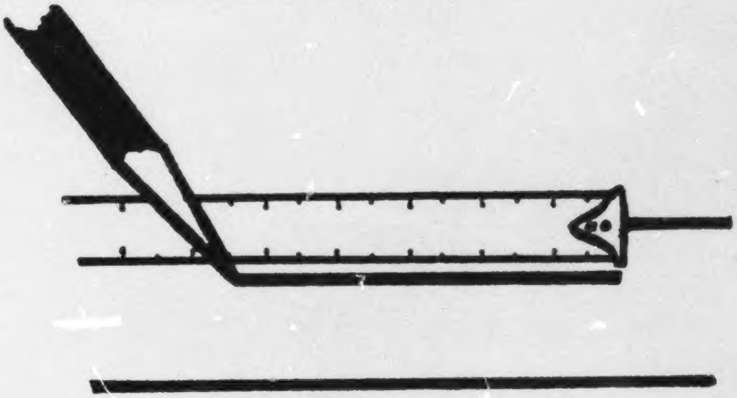


DO: DO JOB STEP 22.

"TURN THE PAGE"

READ: 23. USE THE STEEL TAPE-MEASURE AND MEASURE DOWN FROM THE LINE USED IN JOB STEP 22 THE DISTANCE OF THE HINGE USED IN JOB STEP 10.

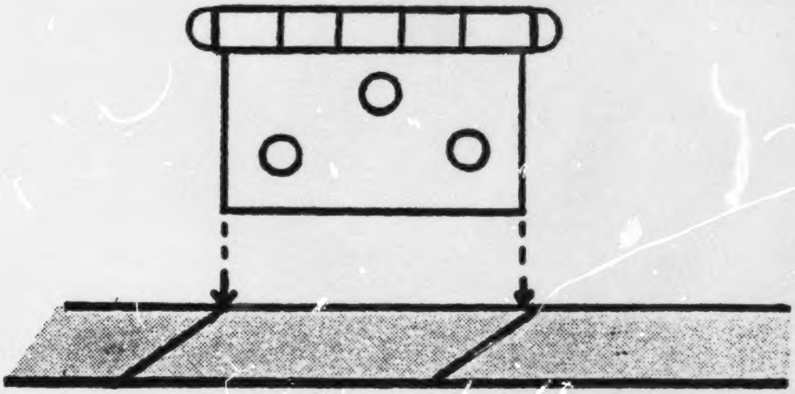
LOOK:



DO: Do JOB STEP 23.

READ: 24. USING THE PENCIL, MARK THE SPOT. THEN, USING THE TRI-SQUARE, DRAW A SQUARE LINE ACROSS THE DOOR CASING LIKE YOU DID IN JOB STEP 22.

LOOK:

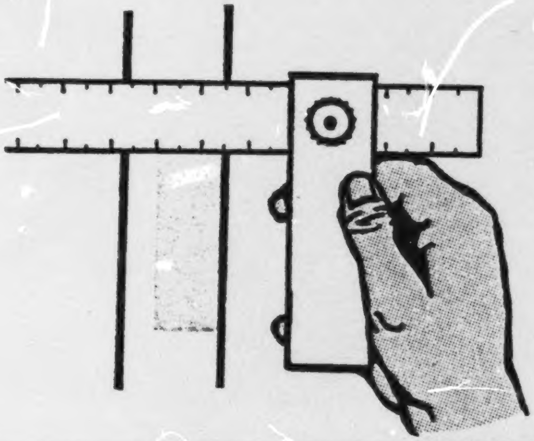


DO: Do JOB STEP 24.

"TURN THE PAGE"

READ: 25. USE THE SCALE ON THE TRI-SQUARE, AND MEASURE THE DISTANCE FROM THE LINE YOU DREW IN JOB STEP 15 TO THE EDGE OF THE DOOR. WRITE DOWN THE DISTANCE.

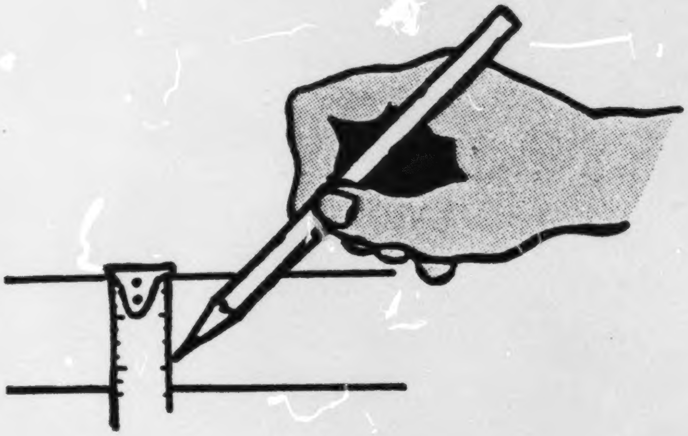
LOOK:



DO: Do JOB STEP 25.

READ: 26. MEASURE THE DISTANCE YOU WROTE DOWN IN JOB STEP 25 IN FROM THE FRONT OF THE DOOR.

LOOK:

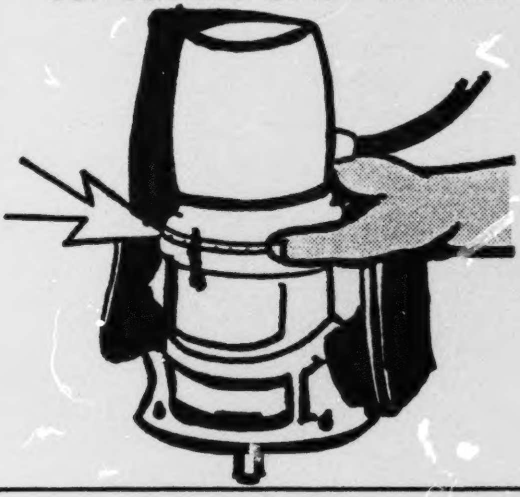


DO: Do JOB STEP 26.

"TURN THE PAGE"

READ: 27. ASK YOUR INSTRUCTOR TO HELP YOU ROUT-OUT THE WOOD THE THICKNESS OF THE HINGE BETWEEN THE LINES YOU DREW.

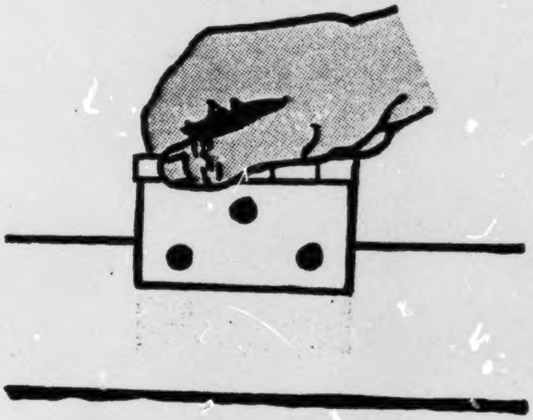
LOOK:



DO: DO JOB STEP 27.

READ: 28. PUT THE HINGES INTO THE ROUTED AREA AT THE TOP AND BOTTOM OF THE DOOR.

LOOK:

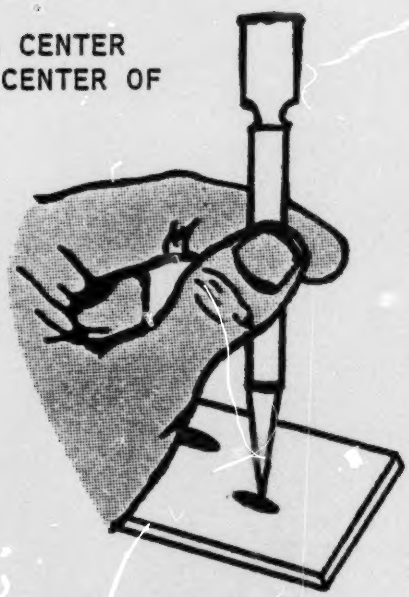


DO: DO JOB STEP 28.

"TURN THE PAGE"

READ: 29. USE A HAMMER AND A CENTER PUNCH TO MARK THE CENTER OF THE HINGE HOLES.

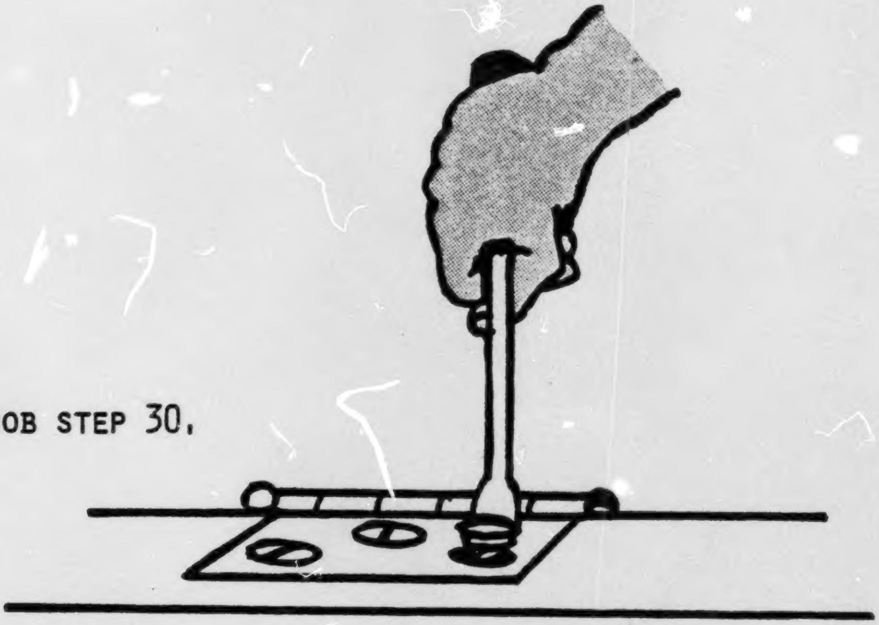
LOOK:



DO: Do JOB STEP 29.

READ: 30. USE SCREWS AND A SCREWDRIVER TO FASTEN THE TOP AND BOTTOM HINGES TO THE DOOR.

LOOK:



DO: Do JOB STEP 30.

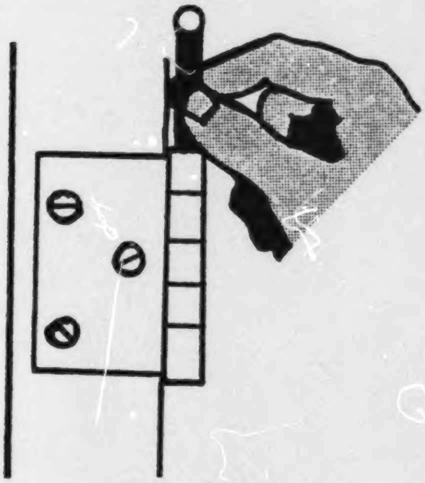
"TURN THE PAGE"

WORD GUIDE

HINGE PIN - A SHAFT OF METAL THAT HOLDS THE TWO HALVES OF A HINGE TOGETHER.

READ: 31. PULL THE HINGE PIN OUT OF THE TOP HINGE.

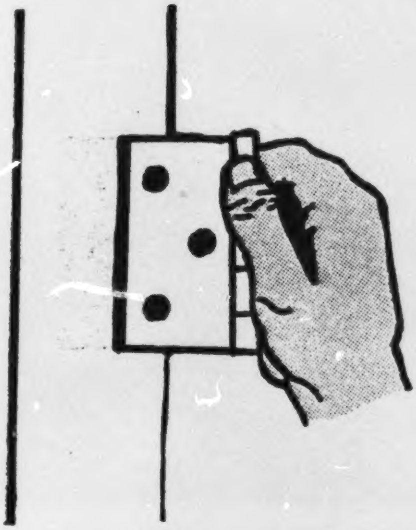
LOOK:



DO: Do JOB STEP 31.

READ: 32. PUT THE LOOSE HALF HINGE INTO THE ROUTED-OUT AREA AT THE TOP OF THE DOOR CASING.

LOOK:

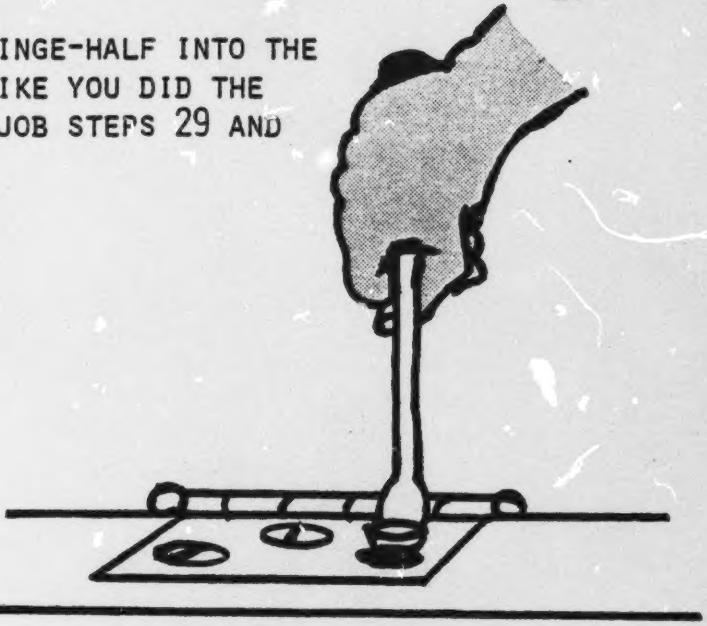


DO: Do JOB STEP 32.

"TURN THE PAGE"

READ: 33. FASTEN THIS HINGE-HALF INTO THE DOOR CASING LIKE YOU DID THE OTHER ONE IN JOB STEPS 29 AND 30.

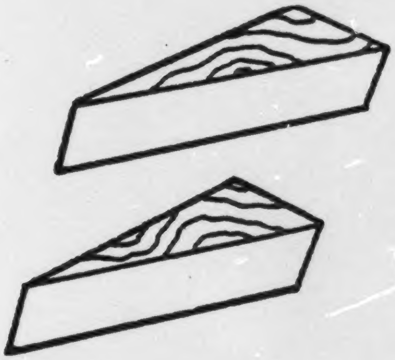
LOOK:



DO: DO JOB STEP 33.

READ: 34. GET THE WOOD WEDGES READY AND KEEP THEM NEARBY.

LOOK:

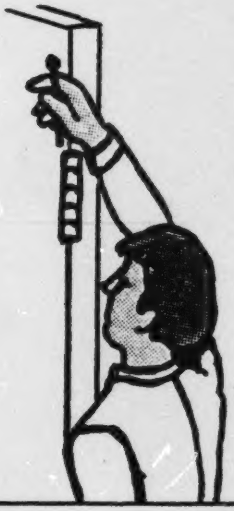


DO: DO JOB STEP 34.

"TURN THE PAGE"

READ: 35. PUT THE DOOR INTO THE OPENING AND PUT THE HINGE PIN THROUGH THE TOP HINGE-HALVES.

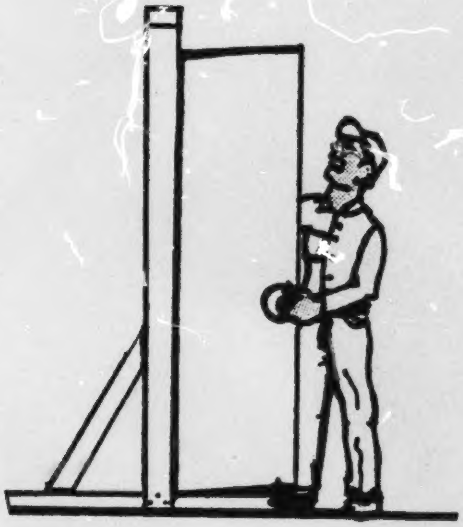
LOOK:



DO: Do JOB STEP 35.

READ: 36. OPEN THE DOOR ABOUT HALFWAY.

LOOK:

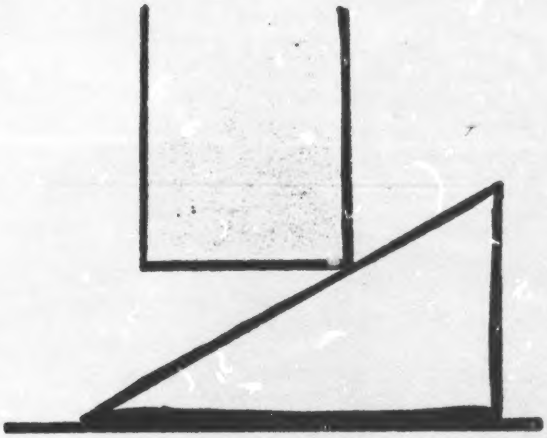


DO: Do JOB STEP 36.

"TURN THE PAGE"

READ: 37. PUT THE WOOD WEDGES UNDER THE DOOR SO THAT THE DOOR IS LEVEL.

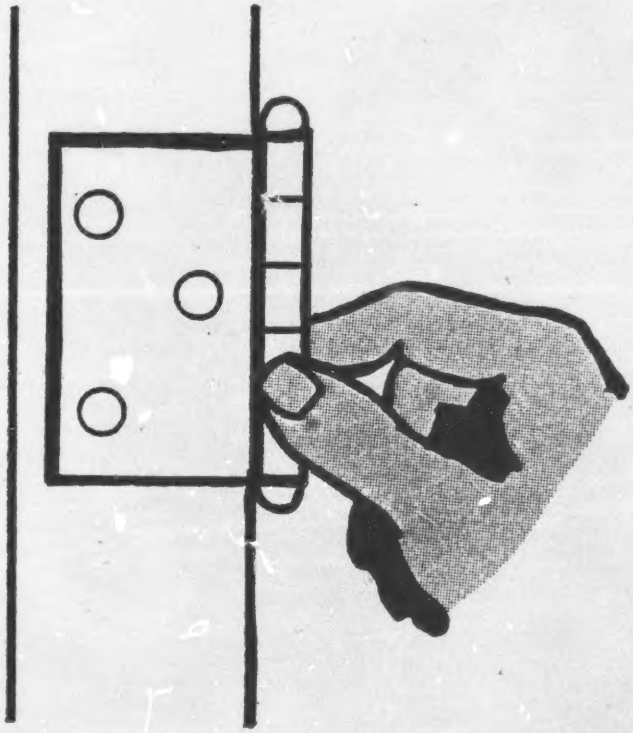
LOOK:



DO: Do JOB STEP 37.

READ: 38. DRAW A LINE AROUND THE BOTTOM HINGE ON THE DOOR CASING.

LOOK:

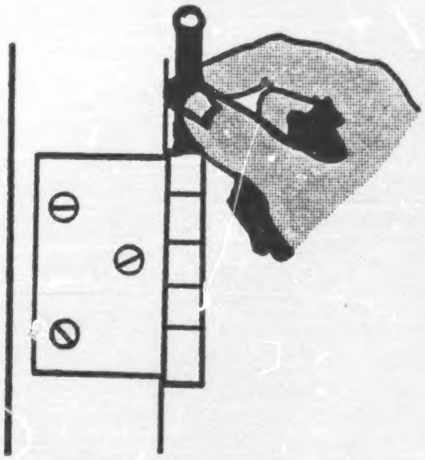


DO: Do JOB STEP 38.

"TURN THE PAGE"

READ: 39. TAKE THE HINGE-PIN OUT OF THE TOP HINGE AND TAKE THE DOOR OUT OF THE OPENING.

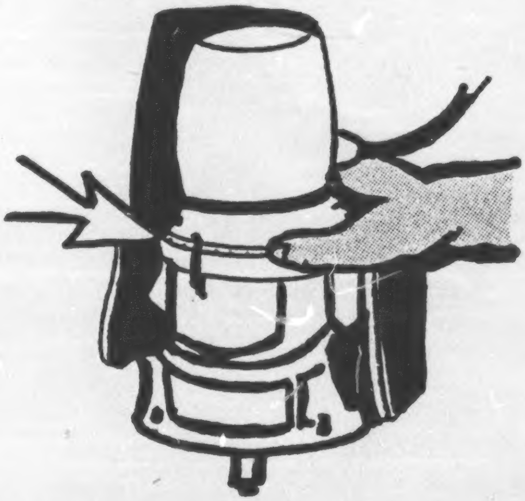
LOOK:



DO: Do JOB STEP 39.

READ: 40. ROUT-OUT THE BOTTOM HINGE AREA LIKE YOU DID IN JOB STEP 27.

LOOK:



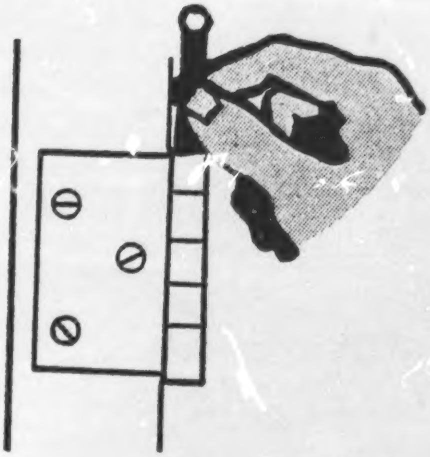
DO: Do JOB STEP 40.

CHECK: ASK YOUR INSTRUCTOR TO HELP YOU ROUT-OUT THE DOOR CASING.

"TURN THE PAGE"

READ: 41. TAKE THE HINGE-PIN OUT OF THE LOWER HINGE.

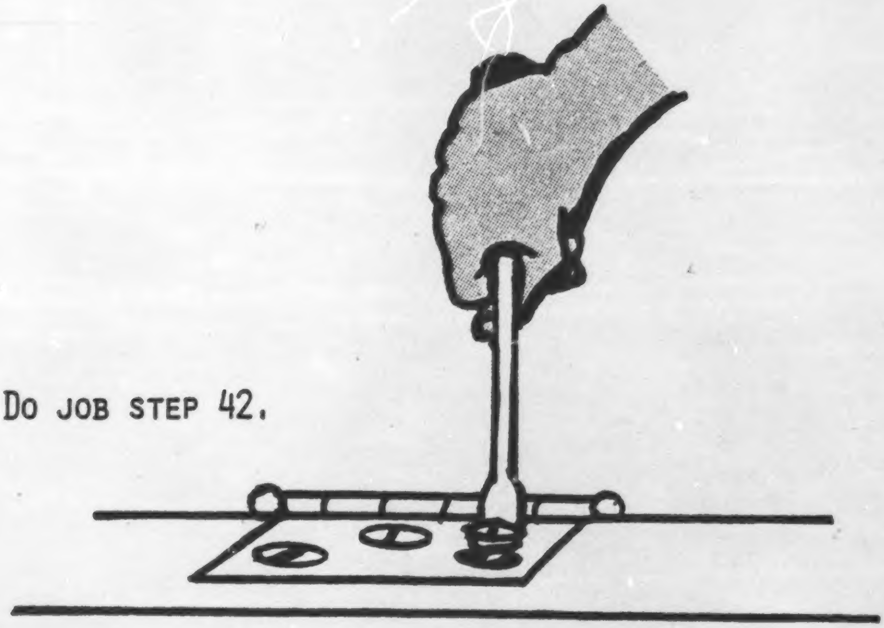
LOOK:



DO: Do JOB STEP 41.

READ: 42. SCREW THE BOTTOM HINGE HALF INTO THE BOTTOM DOOR CASING. DO NOT TIGHTEN THE SCREWS ALL THE WAY YET.

LOOK:

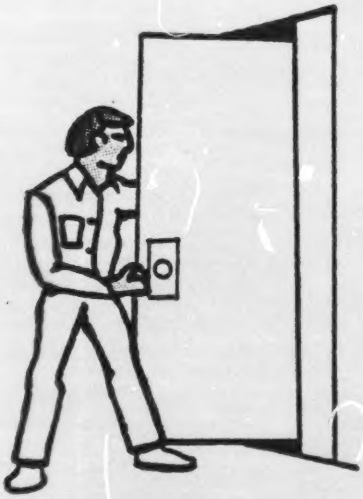


DO: Do JOB STEP 42.

"TURN THE PAGE"

READ: 43. PUT THE DOOR INTO THE DOOR CASING AND BACK ON THE HINGES.

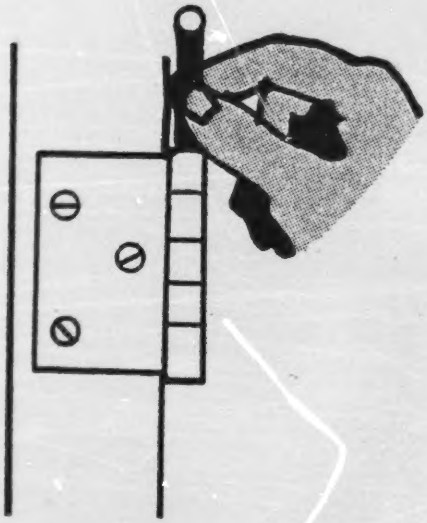
LOOK:



DO: DO JOB STEP 43.

READ: 44. PUT BOTH HINGE-PINS INTO THE HINGES.

LOOK:

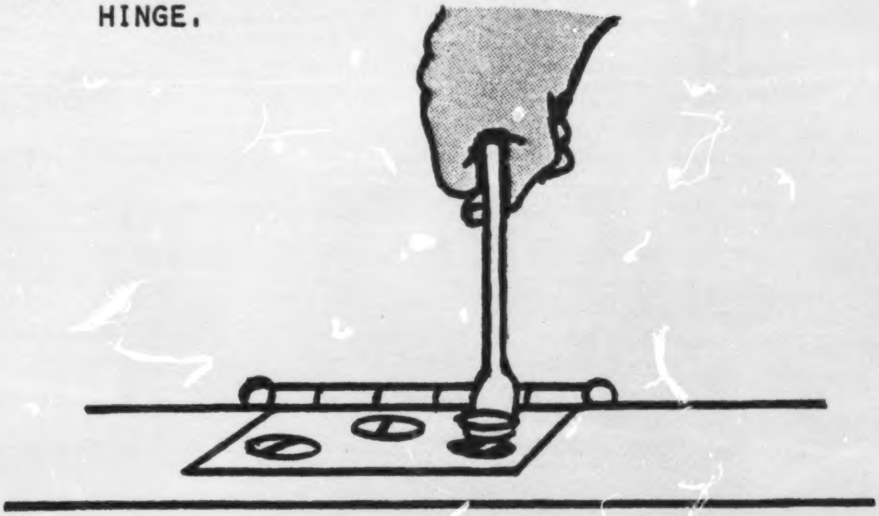


DO: DO JOB STEP 44.

"TURN THE PAGE"

READ: 45. TIGHTEN THE SCREWS IN THE BOTTOM HINGE.

LOOK:

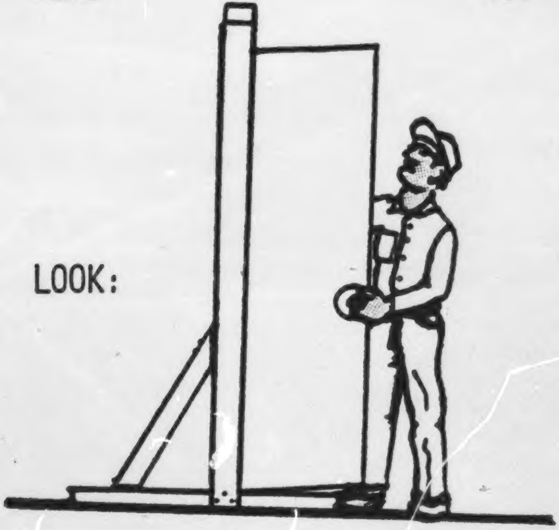


DO: Do JOB STEP 45.

READ: 46. CHECK YOUR WORK. OPEN AND CLOSE THE DOOR 3 OR 4 TIMES. IT MUST NOT STICK WHEN OPENED OR CLOSED.

NOTE: HEAVY DOORS NEED 3 HINGES. THE 3RD ONE GOES HALFWAY BETWEEN THE OTHER 2.

LOOK:



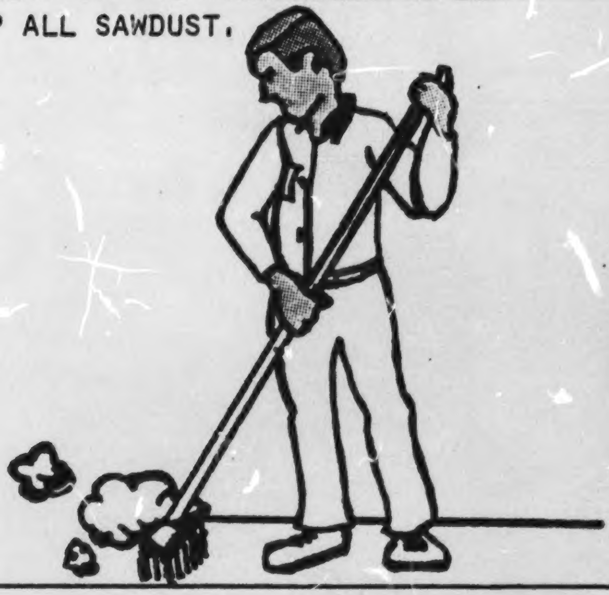
DO: Do JOB STEP 46.

CHECK: NOW, ASK YOUR INSTRUCTOR TO CHECK YOUR WORK.

"TURN THE PAGE"

READ: 47. CLEAN UP THE WORK AREA. SWEEP UP ALL SAWDUST.

LOOK:



DO: Do JOB STEP 47.

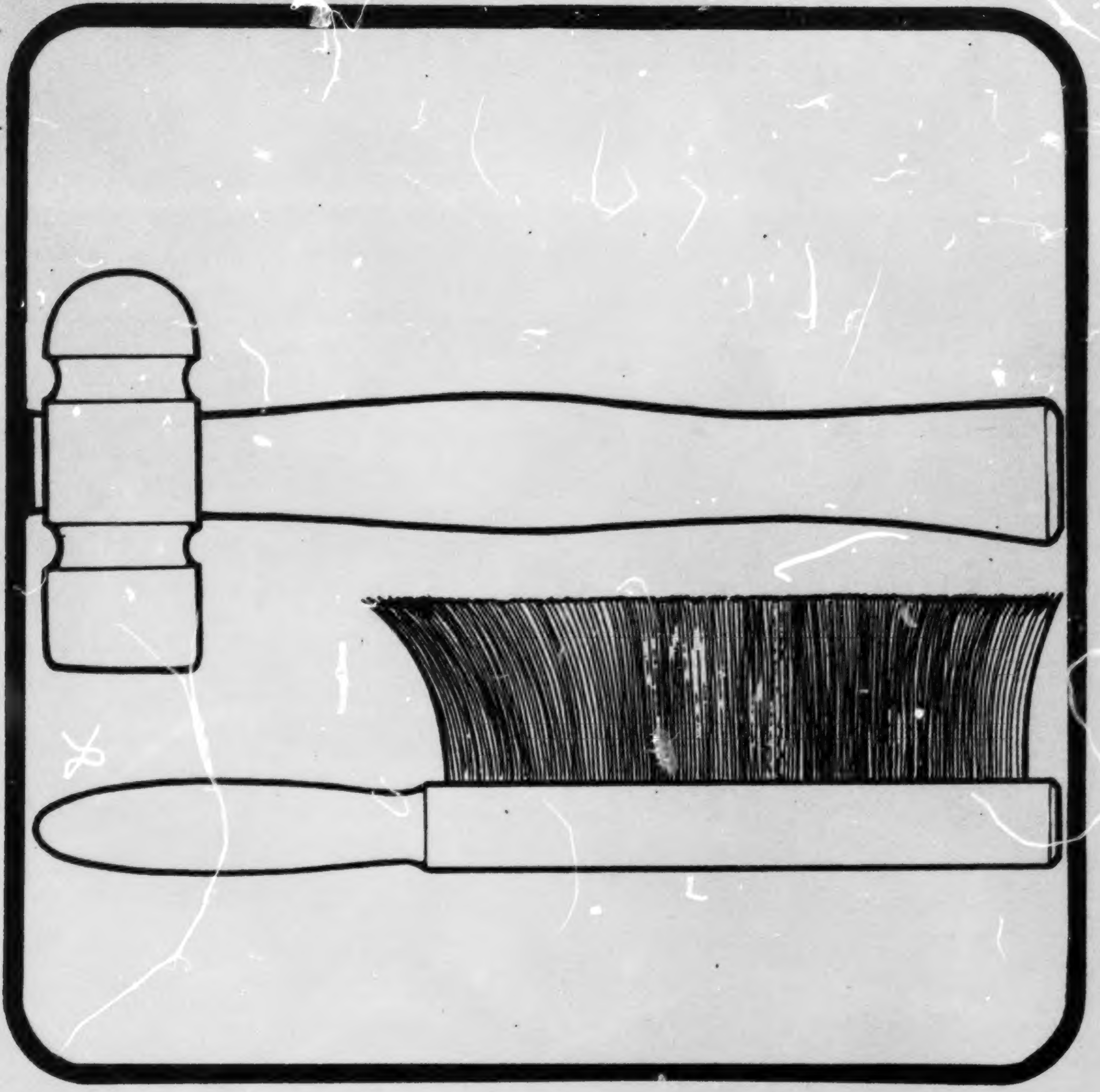
READ: 48. PUT AWAY ALL THE EQUIPMENT AND SUPPLIES YOU USED.

LOOK:

DO: Do JOB STEP 48.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR CLEAN-UP JOB.

READ: 49. GOOD WORK! NOW YOU KNOW HOW TO "HANG A DOOR."



building maintenance & engineering

unit: DOOR MAINTENANCE

capital area career center

module: 2201 24 003 1 **date:** AUGUST 1977 **level:** II

skill title: INSTALL DOOR LOCKS

developed & written by: ALAN STEINBERG

visuals by: CHUCK KNOCK

WORD GUIDE

ASSEMBLY - Separate pieces which fit together into one unit.

PERFORMANCE OBJECTIVE

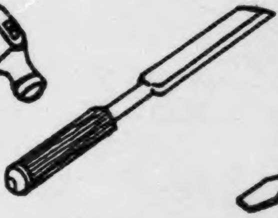
What you will learn:

How to put in a door lock assembly.

What you will need:

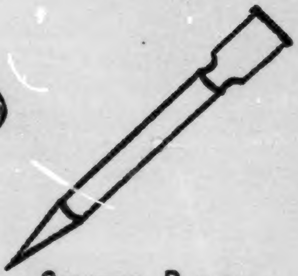
Pencil

Hammer

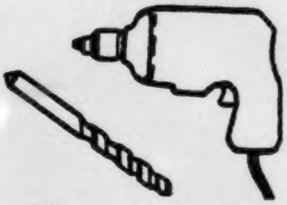


Wood Chisel

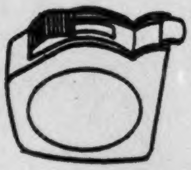
Screwdriver



Center Punch

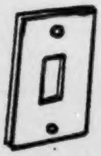


Drill and Bits

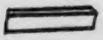


Steel Tape Measure

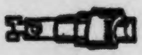
Door
Lock
Assembly



1. Latch Plate



2. Shaft



3. Spring Latch

What you must do:

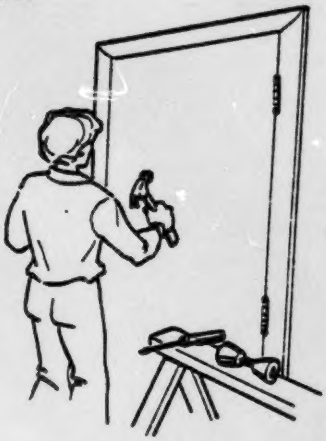
1. Read this module.
2. Get all equipment and materials.
3. Do the job steps for putting in a door lock assembly.

"Turn the page"

JOB STEPS

READD: 1. GET AND TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

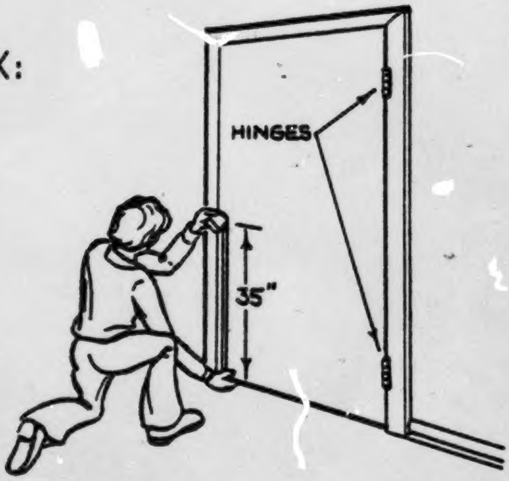
LOOK:



DO: DO JOB STEP 1.

READ: 2. STARTING AT THE BOTTOM OF DOOR (ON SIDE OPPOSITE HINGES), MEASURE 35 INCHES UP THE DOOR AND MARK THIS SPOT.

LOOK:



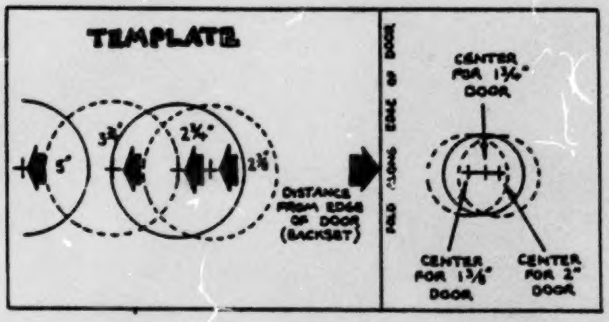
DO: DO JOB STEP 2.

"TURN THE PAGE"

READ: → 3. TAKE TEMPLATE FROM ITS BOX AND LOOK IT OVER CAREFULLY.

NOTE: THE TEMPLATE HELPS IN DRILLING HOLES IN THE RIGHT SPOTS.

LOOK:

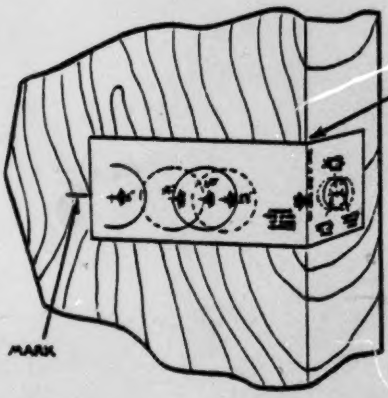

TEMPLATE
5"
3¾"
2¾"
2⅜"
DISTANCE FROM EDGE OF DOOR (BACKSET)
FOLD ALONG EDGE OF DOOR
CENTER FOR 1¾" DOOR
CENTER FOR 1⅜" DOOR
CENTER FOR 2" DOOR

DO: DO JOB STEP 3.

READ: 4. PUT TEMPLATE ON DOOR SO THAT ARROWS LINE UP WITH MARK YOU MADE IN JOB STEP 3.

NOTE: THE FOLD LINE SHOULD BE ON THE DOOR EDGE.

LOOK:


EDGE of DOOR
MARK

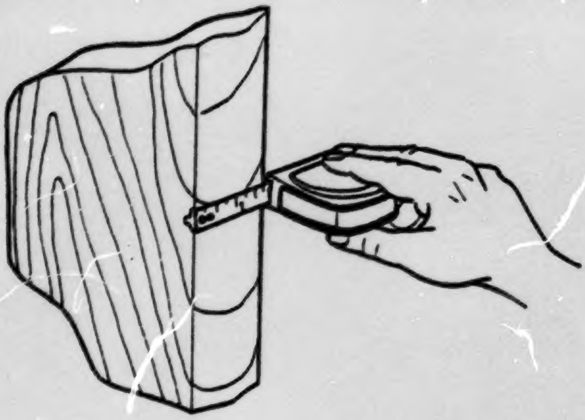
DO: DO JOB STEP 4.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP

"TURN THE PAGE"

READ: 5. USE TAPE MEASURE, MEASURE HOW THICK THE DOOR IS.

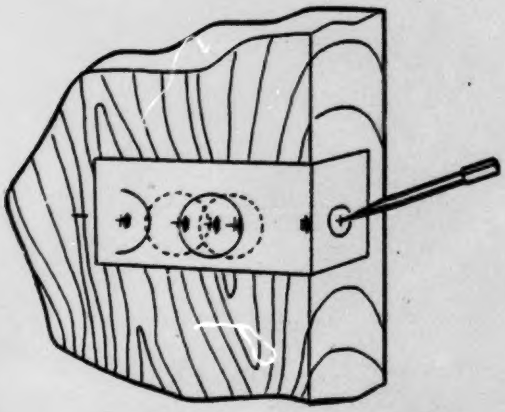
LOOK:



DO: DO JOB STEP 5.

READ: 6. FOLD TEMPLATE AROUND DOOR EDGE. DRIVE CENTER-PUNCH THROUGH THE MARK THAT IS AS THICK AS THE DOOR.

LOOK:



DO: DO JOB STEP 6.

CHECK: ASK YOUR INSTRUCTOR TO HELP YOU WITH JOB STEP 6.

"TURN THE PAGE"

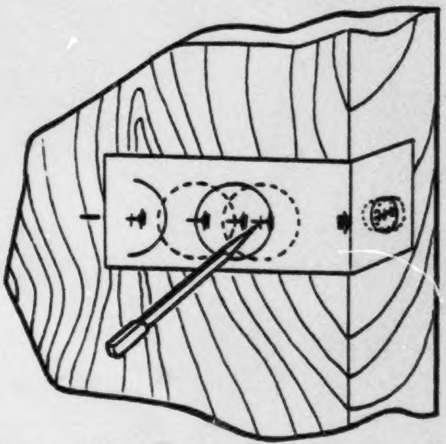
WORD GUIDE

→ DIAMETER - FROM ONE SIDE TO THE OTHER.
EXAMPLE:

READ: 7. HOLD TEMPLATE IN PLACE AND PUNCH-MARK THE BACKSET.

NOTE: THE BACKSET IS THE DISTANCE FROM THE DOOR EDGE TO THE CENTER OF DOORKNOB HOLE.

LOOK:

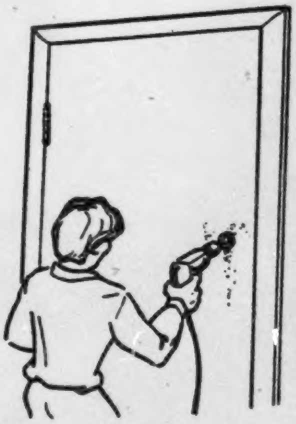


DO: DO JOB STEP 7.

CHECK: ASK YOUR INSTRUCTOR TO HELP.

READ: 8. USE DRILL AND RIGHT BIT TO DRILL A 2 1/8" DIAMETER HOLE THROUGH DOOR AT THE BACKSET PUNCH-MARK.

LOOK:



DO: DO JOB STEP 8.

"TURN THE PAGE"

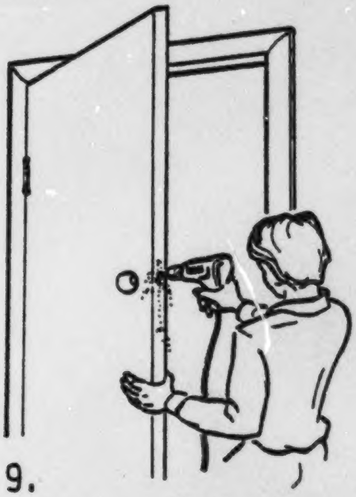
→ **WORD GUIDE**

BEVEL - SLANT.

READ: 9. USE DRILL AND RIGHT BIT TO DRILL A 1" DIAMETER HOLE IN NARROW EDGE OF DOOR UNTIL IT COMES THROUGH THE BACKSET HOLE.

NOTE: DRILL WHERE YOU PUNCHED IN JOB STEP 6.

LOOK:

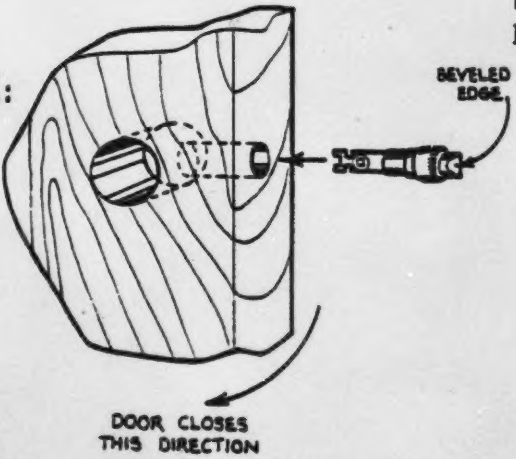


DO: DO JOB STEP 9.

CHECK: ASK YOUR INSTRUCTOR TO CHECK YOUR WORK SO FAR.

READ: 10. PLACE A DOOR LATCH INTO THE 1" HOLE. PUT LATCH IN SHAFT END FIRST AND POINT BEVELED EDGE OF SPRING LATCH IN DIRECTION DOOR CLOSES.

LOOK:



DO: DO JOB STEP 10.

CHECK: ASK YOUR INSTRUCTOR TO WATCH AS YOU DO JOB STEP 10.

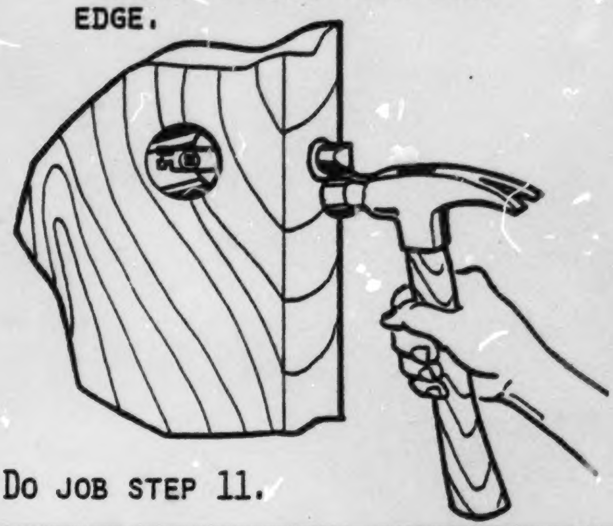
"TURN THE PAGE"

WORD GUIDE

COLLAR - METAL RING AROUND LATCH.

READ: 11. TAP IN THE LATCH UNTIL COLLAR IS EVEN WITH DOOR EDGE.

LOOK:

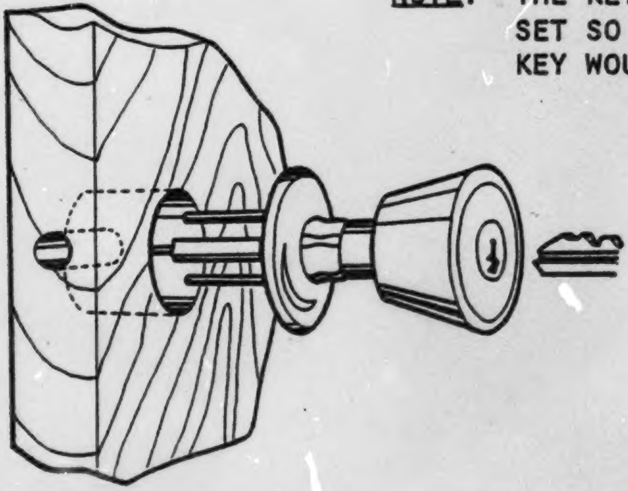


DO: DO JOB STEP 11.

READ: 12. FROM OUTSIDE OF DOOR, PUSH KNOB WITH SQUARE SHAFT THROUGH BACKSET HOLE UNTIL IT GOES THROUGH THE SQUARE LATCH-HOLE.

NOTE: THE KEYHOLE IN KNOB SHOULD SET SO THE ROUGH EDGE OF KEY WOULD GO IN POINTING UP.

LOOK:



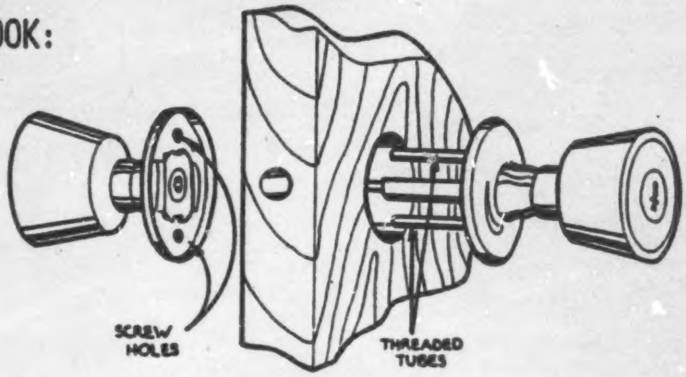
DO: DO JOB STEP 12.

"TURN THE PAGE"

READ: 13. FROM INSIDE OF DOOR, PLACE OTHER HALF OF KNOB THROUGH BACKSET HOLE.

NOTE: SCREW HOLES MUST LINE UP WITH THREADED TUBES OF THE OTHER KNOB.

LOOK:

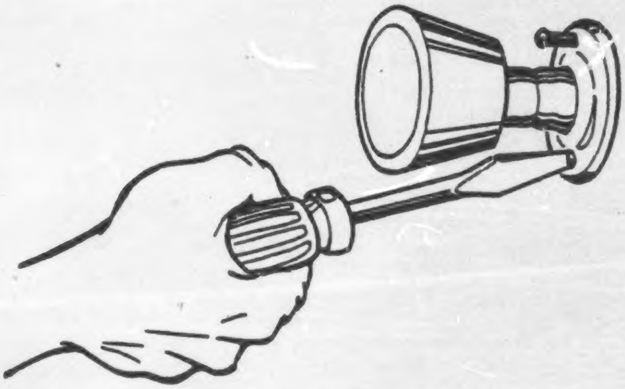


DO: Do JOB STEP 13.

CHECK: ASK YOUR INSTRUCTOR TO HELP YOU WITH JOB STEP 13.

READ: 14. PUT SCREWS IN SCREW HOLES AND TIGHTEN THEM WITH SCREWDRIVER.

LOOK:

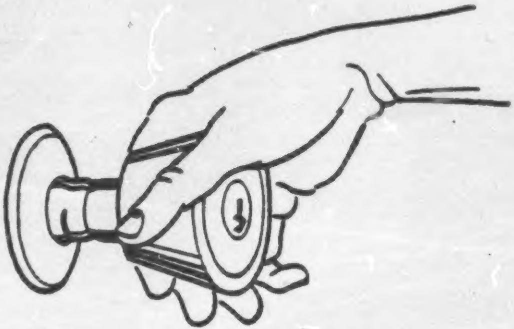


DO: Do JOB STEP 14.

"TURN THE PAGE"

READ: 15. CHECK KNOB BY TURNING KNOB RIGHT AND LEFT. KNOB SHOULD MOVE SMOOTHLY.

LOOK:

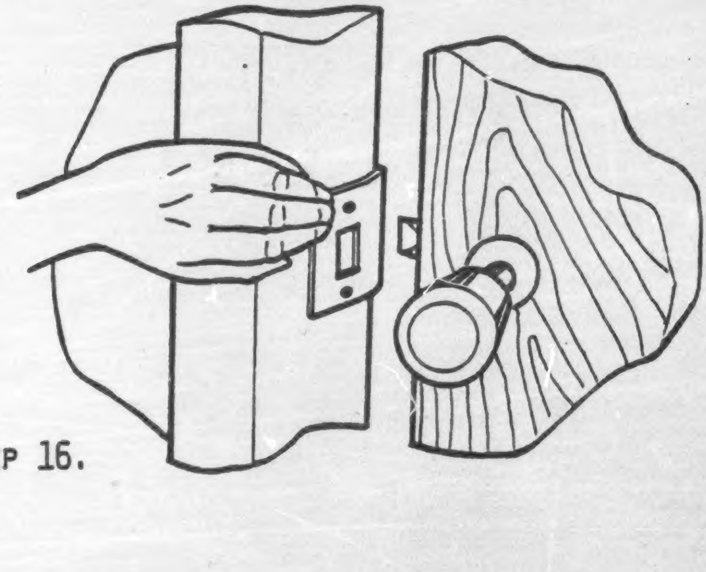


DO: Do JOB STEP 15.

READ: 16. PLACE LATCH PLATE ON DOOR CASING.

NOTE: THE CURVED EDGE SHOULD POINT TO THE INSIDE SO SPRING LATCH MEETS PLATE HOLE AT DEAD-CENTER.

LOOK:

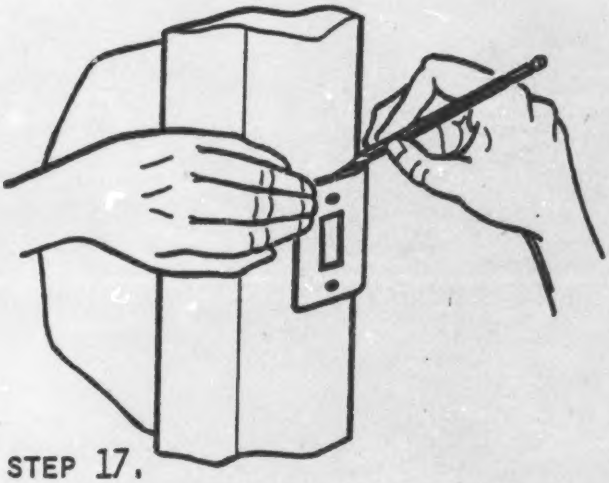


DO: Do JOB STEP 16.

"TURN THE PAGE"

READ: 17. Use a pencil to mark around the latch plate.

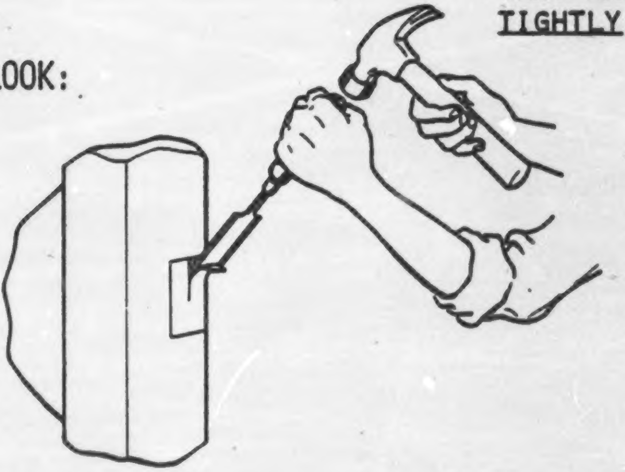
LOOK:



DO: Do job step 17.

READ: 18. Use hammer and wood chisel to take off enough wood so that latch plate fits tightly against door casing.

LOOK:



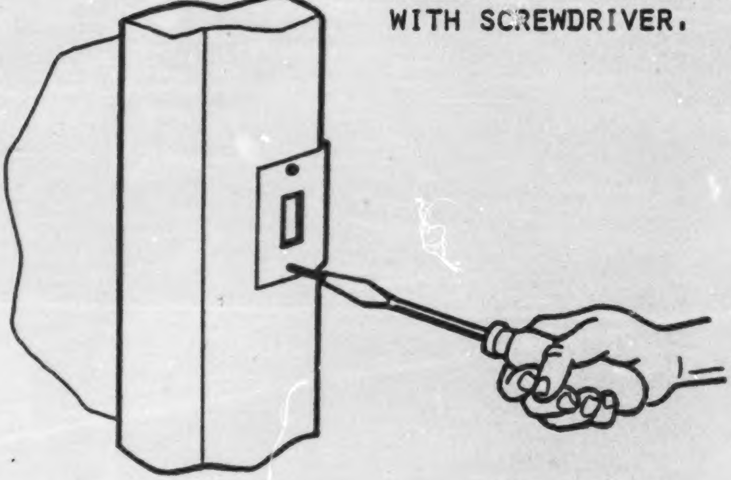
DO: Do job step 18.

CHECK: Ask your instructor to check your work so far.

"Turn the page"

READ: 19. PUT SCREWS IN SCREW HOLES AND TIGHTEN THEM WITH SCREWDRIVER.

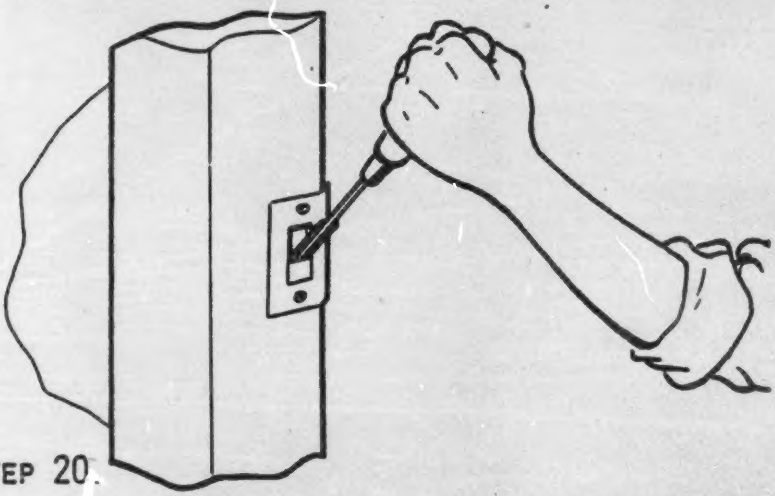
LOOK:



DO: DO JOB STEP 19.

READ: 20. USE HAMMER AND WOOD CHISEL TO TAKE OFF WOOD FROM LATCH PLATE HOLE TO 1/2" SO SPRING LOAD LATCH WILL FIT.

LOOK:



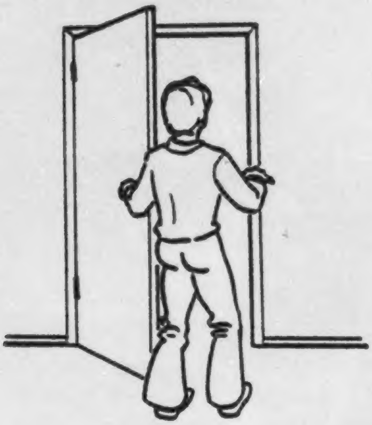
DO: DO JOB STEP 20.

CHECK: ASK YOUR INSTRUCTOR TO HELP WITH JOB STEP 20.

"TURN THE PAGE"

READ: 21. OPEN AND CLOSE DOOR TO CHECK FOR PROPER CLOSING.

LOOK:



DO: DO JOB STEP 21.